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AMERICAN BEE JOURNAL

NOVEMBER

1924



WINTER PACKING WITH LEAF NETS. A GOOD WAY IN THE Milder WINTER CLIMATES.

NATIONAL HONEY WEEK NOVEMBER 16-22

BEES IN WESTERN COLORADO—F. C. Pellett
THE INTERNATIONAL CONGRESS—C. P. Dadant

OVERSTOCKING—J. E. Crane
RELATION OF STORES TO BROOD REARING—
J. H. Merrill



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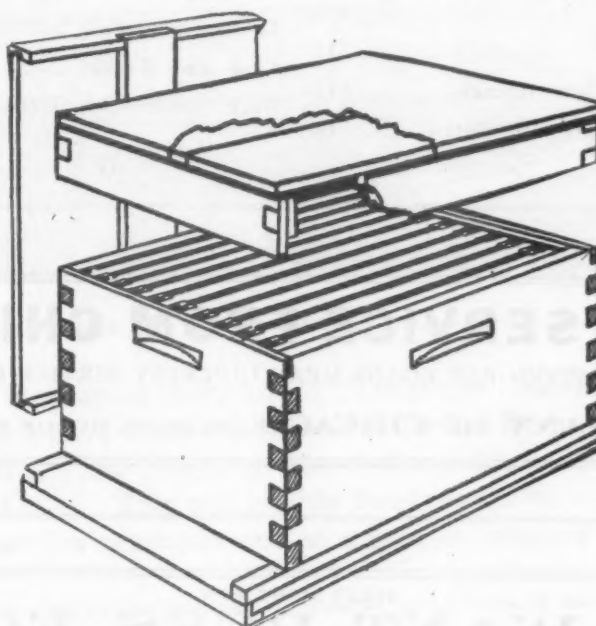
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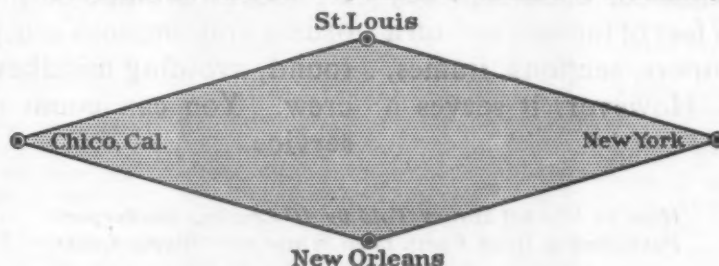
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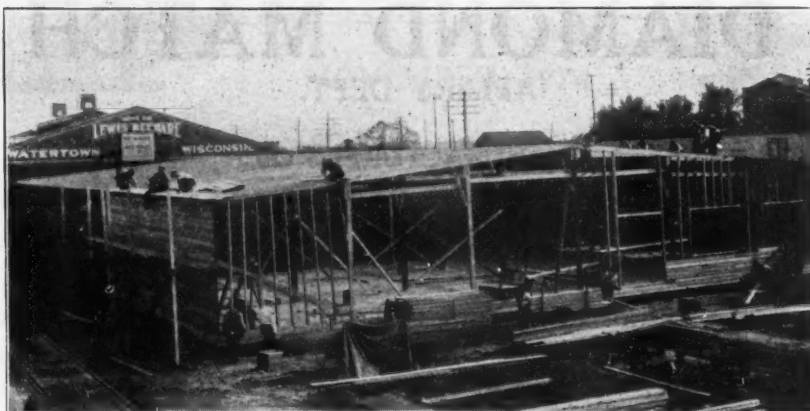
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AMERICAN BEE JOURNAL



VOL. LXV—NO. 11

HAMILTON, ILLINOIS

NOVEMBER 1924

THE INTERNATIONAL CONGRESS IN CANADA

No. 1

By C. P. Dadant.

I AM told by several of our friends that I am expected to give an account of myself while in Canada attending the International meeting. It is a pleasant job, and if those who read it enjoy it half as much as I did, it will be a success.

I was disappointed in the number of United States Beekeepers present. I do not believe there was a single man there west of the Mississippi. The total number of Americans was probably 25. Most of them were from the East, New Jersey, New York, Massachusetts, etc. But those present had an enjoyable time; several who had intended to go home right after the Congress remained to take in the excursions, which in several instances enabled us to visit apiaries that were very interesting.

I left home for the Congress early. I had promised to attend a meeting of the "Federated Massachusetts Beekeepers" at the home of Dr. Myers, at Chicopee, Mass., August 27. I did. We had an interesting meeting, for a number of active bee men were there, among them F. H. Sanborn, a man 80 years old, who is young enough to look 60; also our old friend Allen Latham, whom I was to meet again at Quebec and who can talk bees and handle them as well as he can eat.

On the following day, I went from Springfield to Montreal, a fine day trip, through a corner of New Hampshire and along lakes and rivers. At Montreal, the 29th, Mr. Barbeau, the inventor of the Barbeau system of queen rearing, explained in A. B. J., pages 234 and 308 of 1919, came to meet me at the hotel and we went together to visit the apiary of Mr. Lafreniere, at Ile Perrot, a few miles out of Montreal. There we saw the new system of extracting, the "Radi-aire," in which the combs are placed radiating from the axle of the machine, so as to extract both sides at one time. I acknowledge that I do not like the system, even though it does not require the reversing of the combs, because any imperfection in the combs prevents the full extraction of the honey, since the only opportunity of the honey to come out

of the cells is on account of the slight slope upwards of those cells. The lower part of the comb is also less readily emptied of its honey, since the speed of rotation is less near the center than at the outer edges of the circumference. Mr. Lafreniere is a successful beekeeper, in spite of the fact that he is near the lake formed by the St. Lawrence River. I did not visit the home of Mr. Barbeau.



Cyril Vaillancourt, of Quebec, Chairman of the committee.

The same evening I made the trip from Montreal to Quebec, where I arrived at 10:30. Mr. Vaillancourt had been thoughtful enough to send a young beekeeper, Mr. Simon, to meet me and accompany me to the Chateau Frontenac. I never saw such a crowd, at any hotel, waiting to be assigned rooms. Luckily, our friends had already secured one for me, not a very attractive one, but comfortable. I learned there that three of my European friends were

already there, having arrived that morning. They were Leon Tombu, of Belgium, secretary of the Congress; A. Mayor, of Switzerland, president of the Swiss-Romish Society, and A. Baldensperger, whom our readers know, since he has written for A. B. J. a number of times about beekeeping in Palestine. He was representing France at this meeting.

There were still two days before the Congress, which opened on the 1st of September. But the time was soon spent; that tireless man, Vaillancourt, had planned to entertain us. On Saturday, he took us to the Quebec Provincial Exhibition. The beekeepers' display at that Fair was the best thing on the entire grounds. Imagine, if you can, a fac-simile of the Eiffel tower, just as high as the building would allow, and covered with tricolor electric lights and 900 jars of the nicest water-white honey. The total honey exhibit, as I stated on page 463, was from 2,845 Canadian honey producers. How did Vaillancourt manage to secure such an exhibit? He sent a circular letter to all the Quebec beekeepers, offering to send them jars, by parcel post, if they would fill them and return them, and the above number responded. There was not much variety, not as much as could be expected from so large a number, because the jars were uniform; but the interest and the result were immense. Did any one ever hear of such a result? It was almost marvelous. We also paid an afternoon visit to our old friend, Mr. Verret.

On the following day, which was the last day of August, Vaillancourt took us to a remarkable summer home, some ten or fifteen miles out of Levis, on the south side of the River, at what remained of the mill built 180 years ago by the Lord of Vincennes, said to be the same man who founded the city of Vincennes, Ind., in 1735. A Mr. Lorenzo Auger, of Levis, bought the place, and built the summer home where we were entertained. A number of relics are there, the old water wheel still hangs on the outside and the mounting of

the mill stone is used as a table in the little house.

We also visited the immense bridge across the St. Lawrence, a few miles upstream from Quebec. Some kodaks were taken at both the mill and the bridge; but our people say that they would not make good cuts. I am sorry for it, for that bridge is a wonderful sight, in which tens of millions of tons of iron have been used. The building of it was quite difficult, for the center span broke down twice before the bridge was finished. It is a center of excursions now.

Perhaps the reader now expects me to give an account of the doings of the Congress, which began Monday afternoon, September 1, and continued four days. But it would take more than a whole number of this magazine, and I could hardly do the subject justice, for there were dozens of addresses, so many, in fact, that they did not try to read them all. Only the writers who were there themselves were asked to read or deliver their address. A number of those papers were exceedingly long. For instance, that of Perret-Maison-neuve, on queen rearing, etc., would possibly fill ten pages. A half dozen or so were written on this subject alone. All those addresses will form the bulk of the printed report which we expect to see published in both English and French. It will be worth reading and will cost only the price of a membership in the International. Due announcement of it will be made.

The Quebec French-Canadians were there in good numbers. They had answered the summons of Vail-lancourt, who had said to them in the July "L'Abeille": "You shall come, for we count upon you." The first and last sessions were held by the entire Congress, together, in the hall of the K. of C. A very capable interpreter, Mr. Maheux, Entomologist, of

Quebec, translated every talk. It was an awkward business; so after the preliminaries two meetings were arranged, treating of the same subject, at the same time. Only about half of the delegates understood both languages. They did me the courtesy to permit me to deliver my address in the French hall first, then in the English one a little later. Perhaps you would like to know what it was. But I do not believe I would find in the United States any but objectors to my views on international questions. The time is not ripe for nations to follow the Christ doctrine of brotherly love in commerce, and we will keep on carrying a chip on our shoulder for centuries.

Did I enjoy that Congress? Emphatically, yes. No one could enjoy it better than I, since I knew the beekeepers, the languages and the subjects, and besides was known to all present. However, I found that I would not be a good interpreter, much as I knew both languages, for I often used the wrong language, in starting to speak, and brought a laugh from the audience, who realized that I was making a mistake and meant to speak in the other tongue.

It has often been reported that those Canucks don't speak correct French. Yes, they do, but they use the language of their forefathers, with many words now obsolete in Europe. Then they add a few words taken from the "American language," owing to their nearness to New England. They are still proud of their French descent.

In the editorials for October, I told of an invitation, for a noon lunch, at the home of Mr. Verret, at Charlesbourg, seven miles away, which 67 delegates accepted. The trip was organized by a jovial Canadian, Mr. Beauchesne, and it was laughable to hear the smiling Mr. Verret excuse himself in front of his overladen dining table, saying: "We were



C. B. Gooderham, Dominion Apiarist.

not ready, we did not know you were coming." Look at his photo and that of Mrs. Verret, taken a few days later, during the trip to the Saguenay, and tell us whether you believe those two could properly entertain a crowd. It was real Canadian hospitality, mind you, with the help of 45 nieces. Don't you wish you had been there? But we were all back at the Congress an hour or so later.

Among the delegates from Europe, only one, Baldensperger, could speak English fluently. One delegate from Italy, Cassulo, could not speak anything but Italian. I thought I could understand it, for I can read it readily; but he spoke that sweetest-of-all-tongues so fast that I could only catch a word now and then. Luckily, Baldensperger is a polyglot. A little later another Italian came, the Marchese Luigi Guadagni, who spoke all three languages, and things went on smoothly.

The most important action of the Congress was to pass two resolutions of international scope, for which I think I can take a little credit, for they are in line with the views I expressed. Here they are:

"Resolved, that all the delegates present at this Congress be instructed to request their respective governments, associations or syndicates, to immediately organize an extensive campaign of publicity to increase the use and sale of honey in all countries, and that in such campaign there be no favoritism nor obstruction to the sale of honey for or against that of any country whatever.

"Resolved, that we hope the different countries of the world may take steps to control bee diseases, to treat and to prevent the sale, purchase, transportation of any contaminated colony of bees, either within the country or from one country to another."

Now, friend reader, I feel able to



Mr. Verret and wife. Verret is always smiling.



Leon Tombu, of Belgium.

give you two more articles concerning this trip to Canada. But I can finish it in one, with less descriptions of the excursions which most of us attended. What shall it be? If you like it, please, a few of you, write and say that you enjoy it.

BONDING THE BREEDERS

By F. B. Moore.

The old National Beekeepers' Association has proven to be very good seed from which has grown our American Honey Producers' League, and now the League is bearing fruit, so we know the seed was good, even though it took a good many years to germinate.

The latest venture of the League, and it seems to be not only workable but of far-reaching benefit, is the bonding of queen breeders. A surety department of the American Honey Producers' League is to be organized for the purpose of guaranteeing satisfaction to purchasers of bees and queens. This department is to be managed by a board of governors elected by the breeders and by the League.

Mr. Colin P. Campbell, general counsel for the League, has been appointed as executive.

Queen breeders are required to take out bond covering 25 per cent of their gross business, which will cost them \$10 per each \$1,000 bonding; \$5.00 of this \$10.00 will go in the "loss and expense" fund, \$2.50 will go to build a "reserve fund" and the remaining \$2.50 will go to pay the executive fees and routine expense.

If bonded breeders fail to make satisfactory adjustments of complaints by purchasers the purchasers, if members of the League, may get proper adjustments by filing such complaints with the surety depart-

ment of the League. The surety department will adjust claims and make payments from the "loss and expense" fund until exhausted, then from the reserve fund, and in case this is insufficient, an assessment of \$10 against each \$1,000 of bond may be levied. This ends the obligation of either breeders or the surety department.

When the reserve fund credited to each breeder amounts to \$20.00 the premium will be reduced to \$5.00.

That conditions are ripe for the promotion of this particular service there can be no doubt. Both breeders and northern purchasers express themselves as needing just this protection.

Ninety-five per cent of the queen and package men of the South are "O. K." There can be no question about that. But there is a very small minority who poison Northern beekeepers against the package business because of their loose methods and failure properly to make adjustments.

This surety department is a guarantee that purchasers will get satisfactory service and is a big inducement for businesslike breeders to gather under its standard.

To be associated with this service which the League offers is in itself a guarantee that business will come to the membership; it will be a big advertisement, and from this viewpoint only, will be worth a hundred times the bonding costs. Present opinion seems to indicate that practically every live breeder will be bonded before the spring business starts.

Since this service is offered only to members of the League, beekeepers everywhere should consider this department of great value to them and send in their dollars this fall. Those now members, of course, will enjoy this protection. The non-member will continue to take chances.

Columbus, Ohio.

(The readers will find this question discussed on page 463 of the October issue. A further discussion is in order.—Editor.)

SHALL COMB HONEY PERSIST OR PERISH?

From conversation with some of the largest honey producers in the inter-mountain territory, it is evident that many of the larger producers, who heretofore furnished a large quantity of our comb honey, are now changing to extracted honey production. This is partly because labor has become so high that they cannot afford longer to pay the excessive prices. It is costing too much to produce comb honey.

It is to be regretted that conditions make such a change necessary. Comb honey is decidedly a product for the particular individual and will always have a place which extracted honey can never fill. Beekeepers who have established market connections for their comb honey will suffer materially if these good markets are spoiled from a lack of supply.

In regions where there is a rapid flow of white honey there are particular advantages in comb honey production, and if, by any change in management and methods, beekeepers in such regions can continue in the comb honey game, they certainly should make every effort to do so.

Since the passage of the pure food laws, the production of extracted honey has been steadily increasing and the public has been steadily educated in the use of honey in this form. It is noticeable that the older people invariably think of honey in the comb, and it is only the younger generation that buys extracted honey by preference. There is a decided utility to extracted honey which gives it applications in the market which comb honey does not enjoy. As one lady remarked, in speaking of comb honey, "What can you do with that stuff? You can't do a thing with it but eat it." This is literally true. Extracted honey has many outlets, since it has a wider variety of uses. Nevertheless, comb honey has a high place as a table delicacy and there will always be people who especially delight in it even if it has no virtue but its edible quality.



Baldensperger, Dadant, Tombu and Mayor, on board the boat in the trip on the Saguenay.

AMERICAN BEE JOURNAL

Established by Samuel Wagner in 1861

The oldest Bee Journal in the English language.
Published Monthly at Hamilton, Illinois.

Entered as second-class matter at the Postoffice at Hamilton, Ill.

C. P. Dadant Editor
Frank C. Pellett Associate Editor
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All subscriptions are stopped at expiration. Date of expiration is printed on wrapper label.

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CHANGE OF EDITORS

The September number of the *Beekeepers Item* is published under new management. The founder, L. H. Scholl, because of the press of other duties has found it necessary to retire from its publication. The magazine has been sold to a group of beekeepers and will be issued under the management of E. G. LeStourgeon, with H. B. Parks and W. E. Joor as associate editors. The three men composing the editorial staff are well known and capable beekeepers.

In the past the *Beekeepers Item* has been published especially for the benefit of the beekeepers of Texas, but the new management will endeavor to enlarge the field and get out a publication of national scope.

We extend our heartiest good wishes to the new publishers and wish them a large measure of success. The more good publications devoted to our industry, the better for all.

A NEW BEE MAGAZINE

The *Scottish Beekeeper* is the name of the latest publication on beekeeping to come to our desk. It is a very creditable magazine of 24 pages, published by the *Scottish Beekeepers Association*. Subscriptions may be secured through D. M. Rollo, Hon. Secretary, at 67 Crossgate, Cupar-Fife, Scotland.

There are illustrated articles, news notes, reports from shows and from associations, answers to questions and timely hints. Altogether it is well calculated to sustain the interest of its readers in the affairs of *Scottish Beekeeping*. We welcome our new contemporary and wish long life and liberal support to the *Scottish Beekeeper*.

EDUCATING THE MASSES IN BEEKEEPING FACTS

Our editor has several times accepted a request to address Farmers' Institutes in the State of Illinois, on bees and bee subjects. A few days ago, he had the opportunity to address the six hundred pupils of the Benton high school at the same time as the few dozen farmers and beekeepers who usually attend such meetings. This was due to the kindly co-operation of the principal of that school.

The subject treated was one which is convenient and instructive for the general public, whether they be farmers, householders, students or beekeepers. The subject was: "Popular Errors Concerning Bees and Honey." There are errors made concerning both bees and honey which are as flagrant as the belief that the sun turns around the earth. We all see the sun rise in the morning and set in the evening and of course it is much more plausible to believe that it turns around the earth than to imagine the actual fact, that the earth revolves on itself in 24 hours.

The popular errors that our editor mentioned and fought were quite numerous. We cite a few of them:

The belief that bees damage sound fruit. Many peo-

ple, seeing bees upon fruit and seeing such fruit destroyed in large quantities, especially grapes, take it for granted that bees do the damage, because the bees are caught in the fruit. Yet there are two facts to prove that they do not and cannot do it; the shape of their jaws, which have no teeth, and the evidence secured when a bunch of sound grapes or other sound fruit is placed inside of a beehive, right among the bees.

The belief that numerous visits of honeybees upon the flowers are injurious to the latter. This belief is very much less common than the former mentioned, but many people are unaware of the fact that the honey is in the flowers for the purpose of attracting the bees who, by carrying away both honey and pollen, cause pollen grains to fall upon the pistil or female parts of the bloom and thus fertilize it. In many cases the blossoms could not be fertilized without insects, when some of the blossoms do not contain both the male and female part in the same blossom and when the male and female parts are not ready for fertilization at the same time. It becomes the duty of the instructor to explain that, far from being injurious to the blossoms, the visits of the bees and other insects are indispensable.

The belief that the little yellow or brown pellets that bees carry on their posterior legs when they come to the hive from the field, are wax. Few people know that beeswax is made by digesting honey and that beeswax does not exist in nature without the agency of bees.

The belief that the wax moth can destroy a healthy colony of bees. This is common among uninformed bee owners as well as among the public. Mr. Langstroth was the first man who had the courage to state that this was entirely false. It took courage, some 70 years ago, to contradict such a popular belief.

Concerning honey, the following beliefs were fought by our editor:

The belief that granulated honey is either adulterated or spoiled, that no good honey will granulate. The facts are exactly the reverse of the popular belief.

The belief that there is honey, sold upon the markets in pound sections, which is simply glucose put by machinery into combs made of paraffine and sealed over by a special machine. This silly belief is the result of a hoax, invented by Dr. Wiley, some 45 years ago, which has prevailed so that it is still believed by a great number of consumers who are afraid to buy nice honey in sections for fear that it may not be honey at all. It is easy to convince the people that there is no such thing as manufactured comb honey by calling their attention to the fact that, if the honey was thus manufactured, the sections of it would be as much alike as two cakes of soap, while there are no two combs of honey exactly alike, any more than there are two tree leaves exactly alike or two human beings alike.

The belief that "extracted honey" is some sort of "extract," not pure, but prepared in some way out of honey. There is not enough trouble taken by beekeepers to inform the general public on that score. A few exhibitions, by beekeepers, at our fairs, of the honey extractor, in practice and in the view of the public, are sorely needed to convince the outsider, who knows nothing about bees, of the value of the extractor and of the reason why extracted honey may be produced more cheaply than comb honey.

The belief that all honey should be of the same color and taste. You will often meet people who, at sight of water-white clover honey, will declare imperturbably that that is only sugar syrup, that real honey is yellow, etc. It is necessary to let the public know that honey differs in color, taste and odor, as much as flowers do and that each kind of blossom has a different product.

The above are some of the most flagrant errors made, sometimes even by beekeepers who ought to know better, regarding the honeybee and her products. There are others, for instance the belief of some people that bees are dangerous within the limits of a city, because, as they think, the bees are prone to sting any one, whether near the entrance of their home or a few yards away.

It is exceedingly important, not only for beekeepers, but for the general public that these errors be fought and overcome, with correct information instead. If it were

not for the misinformation with which the public allows itself to be deceived, there would be less prejudice against bees, more credit to their usefulness, more regard for the beekeeper, and a great deal more demand for the bees' product. The old saying of "a land flowing with milk and honey" should prove true of almost any part of the United States, in fact of any part of the world occupied by the farmer, since we see large crops of honey produced in cold countries, such as Manitoba, where fruit cannot be grown. We are excessive consumers of sweets. It behooves us to increase the production of a sweet which is the very best and healthiest of all sweets, as acknowledged by every one. Honey can certainly take its rightful place by the side of milk, as a food supplied by nature without the help of our chemical preparations. It contains many of those vitamins without which we load our stomachs without profit to ourselves.

The best way to diffuse the knowledge of correct facts among the public is to give the information to our young people, at the age when the mind is open and can grasp and remember the explanations given. It took centuries to inform the general public concerning the facts of astronomy. Beekeeping has remained in the background of popular knowledge, because the hive was a closed book until a few years ago. There are still people who believe that the bees have a king and that the drones are the females. We would like to see a more persistent method of giving information than the occasional addressing by a speaker to a more or less numerous gathering of farmers, who do not realize what they may learn at a "Farmers' Institute" until they are there. In the last two meetings attended by our editor, the valuable one was the one mentioned above, where hundreds of people secured information. The other meeting, only 30 or 40 miles away from the one mentioned, had an audience of only 20. Yet the farmers and the school pupils need information in each county. They should have it.

We wish to urge upon our State Institute authorities as well as upon the County Advisors, the urgent need of instruction upon the subject of beekeeping. As we said before, the beehive has been a closed book to the bee owners of the past until quite recently. Yet this industry needs recognition, not only in the production of honey, but in the consumption of it.

We need to inform the farmers as to the best methods of producing honey, but we need as fully to inform the general public on the fact that honey, like milk, is one of the best foods, one of the rare products of nature which do not need manipulation to be assimilable by the stomach, and that it will take only a little effort to make our American land, every acre of it, literally a "land flowing with milk and honey."

SWEET CLOVER IN SOUTHERN ILLINOIS

If there is any part of the United States that needs the planting of sweet clover, more than any other part, it is Southern Illinois, the country which has often been called "Egypt."

With a few tons of crushed lime on worn out farms, and the seeding of sweet clover, the hilly lands of Southern Illinois that have been worn clean of their productive soil, may be reclaimed, just as they reclaimed similar soil in Kentucky. Southern Illinois is a splendid country for fruit, for wheat, etc., but the careless manner in which some of the soil has been permitted to wash away is going to make it a serious matter to reclaim it, unless this method is resorted to. But don't forget that lime is needed and that sweet clover will not grow on land upon which there is no lime. Luckily, lime is not expensive and may be obtained readily.

NATIONAL HONEY WEEK

We owe to the American Honey Producers' League the arranging for a National Honey Week to which a number of States have sent their adhesion. It is to be November 16 to 22, inclusive. The readers of this will be just in

time to make their arrangements for it, by getting their local association to help advertise it.

Displays in grocery stores, special advertising in your local papers, special peddling of honey to get the people started; in fact any urging or advertising will be in order. The date set is very good, because it precedes Thanksgiving by only a few days and it is at that time that people begin to relish all the sweets. Don't forget to tell them that honey is the sweetest of all sweets, and the healthiest. And be sure to avoid speaking against any other honey, because it is not fair and also because all honey must be sold, and when you speak against that of others you delay the sales that much.

And why could we not get the entire world to have the same honey week annually? We have just had an international meeting of the honey producers and we have recognized that there is other honey in the world as sweet as ours. What do you say, you English, Scotch, Irish, French, Belgian, Italian and other Northern Hemisphere nations? Can we not have the same honey week and also agree never to knock each other's product? All honey is sweet, as well as ours. If we have some excellent honey we have some poor honey and other nations can say the same.

MID-WEST HORTICULTURAL EXPOSITION

This is for November 11-16. The Mid-west honey producers should show the horticulturists that they also cut a figure in the agricultural world. If it were not for the bees, the products of horticulture would be much less numerous, since the bees help the fertilization of nearly all fruit blossoms.

Let the beekeepers that can do so make a show at Waterloo, Iowa, November 11-16. Remember that the beekeepers of Quebec had the best exhibit of all displays at Quebec, the first week in September. The Mid-west has plenty of honey, and good honey, too. We should show that we are alive.

Professor Francis Jager is to be the judge of the exhibit. He is a fine man and will exercise good judgment.

GRANULATED VS. LIQUID HONEY

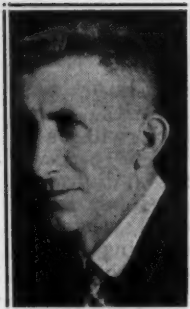
Under the title "Extraction, Presentation and Conservation of Honey," a writer in the September "Apiculteur" mentions granulation and warns the reader against any mistrusting of either liquid or granulated honey, on account of its being in either of the two conditions. He writes:

"Some countries—America is one of them—prefer liquid to granulated honey, under the pretense that it gives more guarantee of purity. This is carried on to such an extent that, when we shipped some honey in glass jars, to New York, in 1921, explanations were demanded of us upon the condition of this honey, which perplexed the buyers. Since then, we have sent there only liquid honey. Other countries, accustomed to granulated honey, are likely to mistrust the liquid honey.

"It is very important not to encourage the mistrusting of purity in honey, on account of the different physical conditions."

It is true that, although the American beekeeper positively knows that pure honey will granulate, he feels actually ashamed of his honey when it does granulate. Instead of trying to win the customer over to acquaintance with granulated honey, he acts as if he were at fault for the granulation of his honey. The public may be trained to acquaintance with granulation in honey, without much difficulty, but the American beekeeper does not seem to appreciate the necessity of this, and we are simply giving in to habits that will always make honey selling difficult, for honey will always insist on granulating in winter.

The monks of the Trappist Monastery of Notre Dame Des Prairies, in Manitoba, assert that the honey they harvest there sometimes granulates within four days after being extracted. They sent us samples which, liquid at time of shipping, were granulated when they reached us, a few days later.



THE RELATION OF STORES TO BROOD REARING

By
J. H. MERRILL, Apiarist

Kansas State Agricultural College and Experiment Station

Contribution No. 321 from the Entomological Laboratory, Kansas State Agricultural College. This paper, which was read in the Apiary Section of the American Association of Economic Entomologists in December, 1923, embodies some of the results obtained in the prosecution of project No. 126 of the Agricultural Experiment Station.

BEES are machines which are owned and operated by beekeepers for the purpose of gathering nectar and storing honey. The amount of honey which they will store will, to a large extent, be proportionate to the amount of understanding which the beekeeper has of their needs and their methods of working. Since nectar can only be gathered during a small portion of the year, it is to the interest of the beekeeper to see to it that his machines are all in good working condition prior to and during this working period. Those machines which are broken down with hard work during the winter must be replaced and a large number of new machines must be secured before the honey flow begins, which, in the case of bees, is accomplished by the rearing of brood.

How often have we heard beekeepers remark, "I think I have left enough honey in my hives to carry the bees through the winter, yet perhaps I may have to feed them when it comes spring." Judging from this remark, it would appear that such a man was a careful beekeeper; furthermore, the fact that he intended to feed his bees in the spring, if necessary, might indicate that he had the welfare of his bees at heart. However, recent experiments conducted at the Kansas Agricultural Experiment Station show that this is a mistaken policy. At first glance it would not seem to make any difference whether the bees were fed in the spring or in the fall, provided the feeding was done before they perished. It is true that it would not make much difference to those bees which were in the hive at the beginning of the winter. However, it would make a marked difference in the amount of brood which would be reared in the year. Since the strength of a colony of bees depends upon the amount of brood reared previous to that time, spring brood rearing becomes a matter of vital interest to every beekeeper.

An experiment to determine the value of winter protection for bees was carried on at this station for four years. During one of these four years the results obtained varied so markedly from those obtained during the other three years that it is

worth while to examine the cause for this variation. In this experiment the number of bees was determined in the fall and again late in the spring. The value of different forms of winter protection was gauged by whether the hive showed an increase or a decrease in the number of bees at the spring weighing. During the four-year period the two-story unpacked hives which were unprotected by a windbreak showed an average 109 less bees than they had in the fall. However, during the one year that varied from the others, this hive had 1,250 bees less in the spring than it had in the fall. The packed hives which were protected by a windbreak during the four years averaged 22,838 more bees in the spring. Yet the same hive in the above mentioned year only showed an increase of 3,800. Apparently both of these colonies had wintered well and would have been considered to be good colonies of bees, but the fact that they fell so far below the general average shows that they had failed to do all that might have rightly been expected of them. The explanation of this failure was found in the fact that both of these colonies were very low in stores. Their food supply was not completely exhausted, although it was nearly so. The direct result of this insufficient food supply was that neither of these colonies reared as much brood as did the others during that year, nor as much as they normally would have had at that date. The curtailing of brood-rearing naturally resulted in a fewer number of bees than would have otherwise been the case.

Observations made during the summer of 1923 tend to further corroborate the statements made above. The amount of brood in eight different hives was determined at various times throughout the summer. Four of these colonies were well supplied with stores, while the others had barely enough to maintain existence. When referring to these colonies in this paper, the first named colonies will be spoken of as "those colonies with stores," while the other four will be mentioned as "those deficient in stores." The queens in those colonies deficient in stores were younger than in the other four and should really have performed better than the others throughout the season, due to this fact.

The first brood count was made on May 26, which showed the total amount of brood which had been deposited in each of the eight hives dur-

ing the twenty-one days previous to May 26. At the beginning of this egg-laying period, those colonies with stores each had about twenty pounds of honey, while the others only had six pounds of honey. On May 26, the average amount of brood in each of the colonies with stores was 17,750, or a daily average of 845 for the twenty-one days previous to May 26. On this date the average amount of brood in each of those colonies deficient in stores was 12,958, or a daily average of 617 for the twenty-one days previous to May 26. The amount of honey which remained in each of these hives averaged 4% pounds.

The weather was very unfavorable for the gathering of nectar during the last of May and early June, yet in those colonies with stores the rate of brood rearing increased, while it decreased in those colonies deficient in stores. The second determination of brood was made on June 18 and at this time it was found that those colonies with stores had an average of 19,575, or a daily average of 932, twenty-one days previous to June 18. The other colonies had on an average 11,095 brood, or a daily average of 528, for twenty-one days previous to June 18. The amount of honey in each of these hives had decreased to two pounds.

The heaviest and practically the only honey flow in Manhattan during 1923 occurred between June 18 and July 11. At the end of this period the colony with stores had an average of 25,055 of brood, or a daily average of 1,050, for twenty-one days prior to July 11. Those colonies which had deficient stores had on an average 15,281 brood, or a daily average of 728, for twenty-one days, and increased their stores to an average of 20% pounds.

The brood rearing records show that there were two peaks of brood-rearing at Manhattan in 1923. One occurring during the first week in May and the other during the last of May and first of June. Those colonies which reared the maximum amount of brood during these two periods were sufficiently strong in bees to gather a good surplus during the honey flow. It will be seen from the above figures that those colonies which were deficient in stores did not begin to rear their maximum amount of brood until they were able to replenish their stores from the field. Those colonies which had sufficient stores had reared their brood early

enough in the season to enable them to take an active part in gathering the season's crop.

It might be argued that observations made during May, June and July could not properly be called observations in that they show that the conditions which were found to exist in the early spring when the stores were short, continued to exist until nectar could be gathered from the field. It is this supposition which is deceiving to the beekeeper who has planned "to feed the bees in the spring if necessary." Since at any and every time he examined his bees he would find that they were not entirely destitute of food, and as he was constantly expecting the honey flow to begin soon, he would have more of a tendency than ordinary to postpone the feeding. The result of this is that the rate of brood rearing will be so materially lowered as to impair the efficiency of the colony during the honey flow. The amount of honey lost during this period due to this weakened condition of his colonies would have been more than sufficient to maintain a maximum rate of brood rearing up to the honey flow.

Some of the conclusions which may be drawn from the above statements are: First, colonies well provided with stores will maintain a maximum rate of brood rearing even during unfavorable weather conditions. This can probably be explained from the fact that whenever the bees maintain in the hive a proper temperature for brood rearing, the queen will deposit eggs. During cool or cold weather the bees maintain this proper brood rearing temperature by consuming honey and indulging in muscular exertions. In other words, heat is generated by work. When there is a sufficient amount of honey to supply a large number of bees at the same time, then it will be possible for them to maintain the optimum brood rearing temperature, regardless of what the outside temperature may be, such as is found during a cold spring. However, when there is only enough honey to supply but a small portion of the bees at a time, it would be impossible to maintain a brood rearing temperature unless the outside temperature approaches this mark. Second, the bees in those hives which are sufficiently supplied with stores will increase the amount of brood reared during periods when the weather prevents their going to the field, as will be noticed between May 26 and June 18. The reverse of this condition will be found to exist in those hives which are deficient in stores. Third, since those colonies which have an abundance of stores in the fall rear more brood in the spring than do colonies which are not provided with stores, it will be seen that the postponing of feeding until spring is a dangerous practice. Fourth, there is a direct correlation between the amount of brood reared in hives insufficiently supplied with

stores and the amount reared in those hives which have enough stores. Fifth, the most dangerous factor in postponing feeding until spring is

that the conditions of those colonies with insufficient stores may mislead the beekeeper as to the necessity for feeding.

NATIONAL HONEY WEEK

November 16 to 22

NOW is the time to begin your plans for the National Honey Week. A plan for maximum advertising at a minimum cost. That is what the League plans to do in holding a National Honey Week for the beekeepers of America. A questionnaire has been sent out to all State Associations and all but two of these favor November as the time. The committee in charge has set November 16 to 22 as the most desirable time for the reason that it is just before Thanksgiving. To make a start, we hope every beekeeper will help in making this week a great success. Prepare to advertise in your locality during this week so that every possible consumer will hear of it. Only two essentials are necessary for success: **PLAN SOMETHING; DO SOMETHING.**

What Individual Beekeepers Should Do.

1. Use stationery, labels, posters, booklets and movie slides bearing the National or State trademark.
2. Get all of the other beekeepers in your city to meet with you and divide up the work and territory as seems best. Select some one to take charge and all who will, follow up the work to see that everyone is taking care of his assignment.
3. Agree to and follow uniform prices.
4. Place honey displays in all local stores that will permit such exhibits. Offer special inducements to get the co-operation of the grocer.
 - a. Help him make up the exhibit, and if he will not purchase, offer to just leave it, giving him a special discount during the week.
 - b. Furnish the grocer with posters and booklets and any advertising novelties you may be able to work out.
 - c. Make it a point to be at the store personally at certain specified periods during the week to give a talk on honey.
 - d. Furnish observation hive of bees for the window exhibit.
 - e. Run movie slides at local theatres telling that honey can be purchased at local dealers.
5. About exhibits—
 - a. First essential, cleanliness.
 - b. Second essential, attractiveness.
6. Work with your hotels and restaurants to get them to serve honey and food prepared with honey during this week. Offer special inducements to get their co-operation.
7. Have food prepared with

honey on exhibition not only in stores but schools.

8. Run any type of "stunt" that will attract attention and interest the public in honey.

9. Run educational articles on honey in local newspapers. Newspapers are usually glad to run such items free of charge.

10. Run question ads several weeks previous to the time of the honey week to arouse the curiosity of the public. Then about three days previous to the opening announce the program.

11. **Recognize trade channels above all.** If you sell to your grocer and also retail honey direct to the consumer during this honey week, you should sell your honey to the grocer at a discount and retail your honey at the same price that the grocer is charging. That is the only kind of business that builds up a trade. Cutting prices never established any market.

Ask for any help you may need and we will do the best we can for you. Send us a complete statement of what you are going to do during this honey week. We want to know what you are doing and also just the amount of honey moved this week. Blanks for such records will be sent you later.

What Local Associations Should Do

1. Hold a meeting at least three weeks previous to Honey Week.
2. At this meeting make arrangements to do:
 - A. Collective advertising.
 1. One large display ad.
 - Two or three little follow-up ads. Pro rate cost among members.
 - B. Get a supply of circulars, booklets, stickers, or movie slides, and posters, too.
 1. Arrange for a proper distribution of these about county.
 - a. Assign each member a certain territory.
 - C. Make arrangements for displays in stores throughout the county.
 - D. See editors of papers about running the series of popular interest "Bee and Honey articles" (These will be furnished by State Association).
 - E. Get a good lady—preferably a beekeeper's wife, sister or mother—to give demonstrations at one store each day during honey week.
 1. Such a demonstration would call for food made "The Honey Way," to be on exhibition and printed recipes for the food on display.

With each purchase of honey, one of these recipes should be given.

F. See local health officers to secure their co-operation, get endorsements, etc.

a. We have prepared a series of articles for newspapers which we know to be acceptable to both county and city newspapers and if you will write the secretary of the League, you can secure a set of these articles free

of charge. If you wish suggestions for any peculiar conditions which may exist in your locality, write us and we will be glad to help you.

After the week is over, please send us a report of what you did and the success obtained. We will furnish you with report blanks.

HOLD YOUR BOOSTER MEETINGS EARLY. THE SUCCESS OF HONEY WEEK DEPENDS UPON HOW CAREFULLY YOU PREPARE.

DEVELOPING LOCAL HONEY MARKET

No. 6—Results and Costs

By G. H. Cale.

THIS is the sixth and last of our marketing series, developed as a result of our small experiment last fall. Apparently it has been of interest since a number have written about it and have already made use of the plans we tried. Not that there has been anything new in our work, but it has perhaps helped apply a few common merchandizing methods to the sale of honey. It has been worth while if it helped that much.

It also served to uncover the fact that, here and there, are beekeepers who have also gone about their marketing in a like way. In fact, our little stunt dims in comparison with some of these larger efforts. The few that have come to our attention suggests that there are others, but the men behind them are too busy to get their affairs in print. We need good accounts of them and hope, if they read this that they will feel compelled to write about their experiences.

Our Results

The three of us, Swanson, Watt and Cale, have tried to give these as we went along. Watt perhaps summarized them the best last month. Remember, also, as Watt so well pointed out, "the grocers were already stocked with jobbing house honey and with pails of local honey and were poisoned by the producers having peddled their honey to the grocer's customers at the same price as he did to the grocer himself."

Our total sales were 6,500 pounds of honey, of which 2,250 pounds were taken in the orders of our original canvass. The stores, therefore, not only doubled our original sales but sold 2,000 pounds additional.

Of the three containers used, the 2½-pound can was, by far, the quickest to move. The sales of this were double the sales of the 5-pound size. The 5-pound pail moved well, though, and its sales totaled over four times that of the 10-pound pail. Relatively few bought the latter, the total sales being 110 pails.

The 6,500 pounds sold represents a crop of 100 pounds per colony from 65 colonies. I think, if we had kept at it longer, we could easily

have doubled these sales with not much more cost, and this is where we made our great mistake. We had the machinery all oiled to absorb the honey and then stopped. Results had really just begun.

It takes more than two months to fill out a market. I am confident that a good honey salesman in a territory with two or three towns like ours could easily sell all the crop from four or five hundred colonies. With honey stored and on hand to supply the trade the year around he could make a good living just selling honey.

We sold the 2½ pound can at 65c, the 5-pound pail at \$1.10 and the 10-pound pail at \$2.00, with 20 per cent off to the grocer, giving us about 17½ cents a pound. This is a little low. I believe we should have had at least 20c. Deducting about 3c a pound for packing and for the lithographed container, which we used exclusively, we netted about 14½c a pound, a total of \$942.50. This does not take out the cost of the selling.

Selling Costs

The cost of canvassing the city of Keokuk, with a population of about 16,000, was \$130.00, divided as follows: Labor, 21½ days, at \$4.00, \$86.00; meals, \$13.00; mileage on Ford car at 10c, \$10.50; honey samples, \$20.00 (see page 336, July).

There were four of us in the canvass and we worked for different intervals of one week. I have figured the cost, therefore, as days of labor.

The store canvass was less expensive. It cost \$54.00; mileage, \$10.00 and labor \$44.00. This includes, also, the cost of setting window displays, signs, etc.

The newspaper advertising for the period totalled \$42.00. The posters, signs, window cards, recipe books and order stuffers came to about \$40.00, and the materials for the shelf and counter displays about \$8.00, making the total advertising costs about \$90.00.

Here we have it, then: City canvass, \$130.00; store canvass, \$54.00; advertising, \$90.00; total, \$274.00.

If we could have done without the city canvass our costs would have

been halved. But we felt it was necessary. Even now I think we would repeat it if we were to start again.

These costs, \$274.00, deducted from our net of \$942.50, gives us \$668.50, or about 10½ cents a pound net for the honey we sold.

Now, you folks who cut prices and you folks who just naturally sell too low (like ourselves), read this and shiver. It has taken me three months to get up courage to give these figures, because they make me admit that the effort did not pay. We already had a market in 60-pound cans at 12c.

But we wanted to know just the possibilities in local marketing. I believe it was a mistake to make only a two months effort and then stop. Our selling machine should have been kept at work the entire year. This would have cost more but it would have distributed the cost over a long period, making the profit per pound greater. If we had netted 15c I would consider the effort profitable.

We are not discouraged by any means and are keen to try it again. This much we do know. It takes courage, time, money, and effort to develop the local market to the beekeeper's continued profit. Many are doing it successfully. We shall try it again this year with a closer eye to costs and a longer and more determined effort. We hope, also, to get from it something of interest and value to our readers.

Wisconsin's Plan for Honey Week

From H. F. Wilson we get the following: "We are planning to have printed about 10,000 copies of the National Honey Week suggestions for distribution among state and local associations. I would like to have you call special attention to the use of radio during this week. I have made arrangements with the University Radio Station to give four or five talks at this time. One of these will come on Friday, before Honey Week, and then we will give three additional talks during that week. If arrangements can be made for a few talks like this in every state, particularly through some of the big radio stations, I think it will be a big thing." The suggestions referred to are those appearing as the article on page 509. These were prepared by the Honey Producers' League for the use of beekeepers. We thought them worthy of special space in the Journal, since the observation of Honey Week deserves all the publicity possible.

New York Gets Behind National Honey Week

The Empire State Federation of Beekeepers' Co-operative Association plans to help out in National Honey Week, November 16-22. They hope to have radio talks and other means of publicity. Every state should do something. The time is short, too.

HONEY RECIPES ON CARDS

The scrap book of a housewife recently uncovered a recipe for "honey drops" which she had clipped from the household page of a local paper a couple of years ago. In it the writer said:

"A great number of the discoveries of this world have been made while trying for something quite different. I was trying to make a nougat de Montelimar, when I got something that I found would make up into acceptable honey drops, since that famous nougat is elsewhere called honey nougat.

"First I purchased for 60 cents about three ounces of it, or what we would call a ten-cent strip.

"I translated a recipe for what the French speak of as almond sweetmeat from an ancient French dictionary. I tried out the easiest thing first and got this, which is not a nougat:

"Cook fourteen ounces of strained honey to crack stage, or 290 degrees, stirring often and watching carefully. Pour it over one stiffly beaten egg white, slowly beating all the time; finally add some blanched and dried almonds, cut fine, and some pistachios. Pour into buttered and sugared pan to make an inch thick layer. Cool in dry place. Cut up like caramel, shaping with two knives; roll in powdered and sweetened chocolates. Keep cool."

The uncovering of this recipe brought up the question why the housewife did not use the card index system for her recipes, as so many women do. This in turn suggested that inasmuch as so many women use the card system for recipes, why would it not be a good plan for the local beekeeper to print in his advertising some recipes for using honey which could be clipped for these card files.

All that would be needed would be to have the printer put a rule border around the space 3x3 inches, which is the size of these cards. Inside of this space, along with the recipe, should be the name of the beekeeper and his address. Where it says honey the name of the brand should be used in every instance, provided the honey is branded. In this manner advertisement becomes a part of the regular recipes of the housewife and she sees it every once in a while.

In some cases the prospective business might warrant the beekeeper in having printed an index card—a card on heavy stock with the word "Honey" on a tab that projects above the recipe cards. Whenever the housewife looked at her file of recipes she would see "Breads," "Cakes," "Roasts," "Salads," and so on, and "Honey" along with them as a regular article of food. Thus she would be tempted to look at the recipe cards under that section more often.

Even if not all the women in a community have card files, the recipe, printed in the 3x5 form can be

clipped just as well for the scrap book.

Such successful merchandisers of food products as the fruit growers in California print their own recipe cards, showing how their products can be used, and supply them to the women. It creates more users.

And recipes do increase sales. A big canned goods company recently made the statement in an advertising journal that publishing recipes resulted in a 65 per cent increase in sales.

HONEY SELLING MADE EASY

By V. Van Houten.

We have developed a system of selling honey which is very satisfactory to producer, consumer and distributor, and one that many producers could use to advantage with part or all of crop.

We have a neat and attractive label which is very distinctive and tells in what locality and from what class of blossoms the honey was produced, with directions for liquefying and a suggestion to try it granulated, if it should reach that state, and our name and address at the bottom of the label.

Experience has taught us to adopt the quart and pint milk bottle, which are as good as legal tender at the store, thus practically eliminating the cost of containers, since we frankly include the cost of bottle in the price and the purchaser is repaid for the bottle when returned and so no one is the loser. We attach the label with liquid glue well thinned with water and applied with a paint brush. We blend the light and dark honeys as uniformly as practical and withhold honeydew or any other inferior goods from the bottles; therefore we have but one grade and that one thoroughly satisfactory.

Our selling is mostly done through the grocers and there is only and always just one price: Forty cents per pint and seventy cents per quart, no matter whether sold at our door or at the furthest store. The merchant is allowed a discount of 20 per cent on all he buys, but no discount or commission on the empty bottles returned.

Every package is sold with a guarantee to please the customer, and the merchant is instructed to take back any that is returned, even if half used, and pay for what remains and then ask if anything is wrong with the honey. The merchant also may return any or all he has at any time, and is encouraged to return granulated stock for re-liquefying. They seem to consider that entirely uncalled for and unnecessary however, as the customer understands granulation by the label and the goods sell without trouble.

Confidence and service are the great essentials for the success of this plan. We win the confidence of the merchant by taking all the risk of a trial. He may sell his trial order before paying for it, if he likes.

We give him an interesting talk on bees and honey, especially explaining the process of extracting and telling what flowers the honey (our honey) is made from. Our honey is made by the bees, not merely gathered, and it is extracted, not strained.

The bottled goods, with the attractive label, does its own advertising in the store and its quality inspires confidence in the customer.

It is necessary to call on the merchant, or at least call him up, for his order every month or two, for he is used to buying that way and a personal talk, if one knows what to say, how to answer questions and when to stop, is good business. We boost our honey first, local honey next and all honey all the time. We have not yet found occasion to "knock."

Washington.

WHITHER?

By Rev. A. A. Evans.

It is worth while considering whither our present method of beekeeping is tending. The box hive and movable frames have had a past of only 60 years. Undoubtedly these are a vast improvement and a permanent gain. But they have made possible an amount of manipulation and interference at the hands of the overfussy and the narrowly practical which may be gradually lowering the stamina and vitality of domestic bees. They are fed with artificial foods, dosed with many drugs, supplied with strange combs; the queen, especially, is the object and victim of experiments manifold—forced to a fecundity unknown to those in a state of nature, worn out before her life has half reached its term and then hustled off to make room for another. It is a question not at all fanciful or academic; whither is modern beekeeping tending?

Romany and Gorgio

It would be interesting to learn—for the subject is allied—what is the amount of disease and death among our modern Ishmaelites, the gypsies of today. These, too, live in rebellion against the artificial conditions of ordinary life. They dwell in the open, regardless of sanitary rules and up-to-date requirements. Yet they look wonderfully well and lusty and seem very happy. Unfortunately, like the vagrants of our apiaries, they escape the census, and there are no elaborate schedules giving sicknesses and length of days of these children of the road.

Honey in Bakeries

Our attention has been called to the fact, and we have also noticed ourselves, lately, considerable trend on the part of bakeries to use honey in their bread instead of sugar.

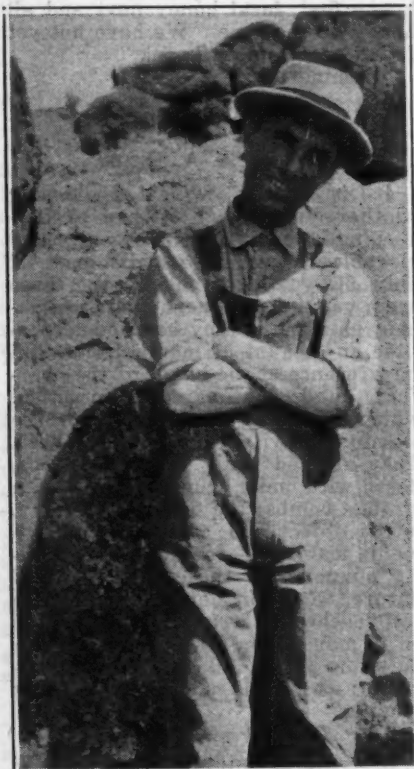
Undoubtedly, honey will make bread very much better than sugar as formerly used, and it is to be hoped that the bakers can be influenced to use honey throughout in their baking, thus opening an avenue for the darker grades of honey and helping to stabilize our price for honey.

BEES IN WESTERN COLORADO

Notes on Honey Production on the Western Slope of the Rocky Mountains

By Frank C. Pellett.

I WAS much impressed with the change in sentiment that has taken place in the past ten years, concerning winter protection among Colorado beekeepers. When Phillips and Demuth went to Colorado to hold a short course and to preach winter protection for bees, it seemed that there would be but few to agree with their conclusions. Now, at every stop, there are a few beekeepers who are convinced that winter protection is a good investment under Colorado



J. D. Caldwell, of Rifle, Colorado.

conditions and more are inclined to give the matter a trial. My attention was called to a number of apiaries where packing cases of one kind or another are used on the eastern slope. At Pueblo, Harvey Said has a number of large packing cases built on the plan recommended by the Government and reports favorable results.

It is farther west, however, that one finds more interest in winter protection. Winter losses are reported as having been much heavier since the general change from comb to extracted honey. J. D. Caldwell, of Rifle, explains it as a result of the brood nests being filled with fall honey late in the season. The comb honey colonies fill their brood chambers earlier from alfalfa and sweet clover, which are safer for wintering. Caldwell reports that his bees, run for comb honey, winter well in the open, since there are frequent days when the bees get good flights. At the same time, however, his colonies

run for extracted honey suffer heavy losses under the same conditions, about three winters in five. Caldwell is an advocate of winter protection and winters some of his bees in the cellar and some in packing cases with equally satisfactory results. He emphasizes the fact that the quality of stores is an important factor in wintering by any method.

Caldwell is one of several beemen who went to Colorado with the intention of raising fruit and, after becoming acquainted with the region, engaged in honey production instead.

Western Colorado is a mountainous region with but a small area suited to agricultural purposes. The valleys are very narrow and the rainfall so light that the farmers depend upon irrigation. Alfalfa is the principal cultivated crop which provides pasture for the bees. Sweet clover is common along ditch banks, roadsides, and out-of-the-way places where it can find a foothold. In many of the valleys fruit growing is the leading industry, but the fruit growing districts provide a problem for the beekeeper in the application of spray poisons to control the codling moth and other fruit pests. If alfalfa and sweet clover were removed there would be little attraction left for the beekeeper in this region. In the neighborhoods where there is a large acreage of these two plants it would be hard to find better bee pasture. The high altitude insures a sufficient change of temperature between day and night to stimulate ample nectar secretion; irrigation provides a water supply except under exceptional conditions and the honey secured is of the highest quality.

There are few good beekeeping territories with which I am familiar which are already as completely stocked with bees as the Colorado country. Commercial beekeeping was developed in Colorado before it was taken seriously in the middle west and as a result the good locations have been long occupied. In most localities the best way to find a location is to buy out someone already on the ground. One who knows the country could no doubt find many places where there is still good pasture available, but the stranger will have difficulty in finding them.

Finding a Market

Colorado beekeepers were the first to establish successful co-operative marketing organization, under the management of Frank Rauchfuss, with headquarters at Denver. By means of careful grading and honest packing the organization has been able to establish a good reputation for its product in eastern markets. Very little honey of poor quality goes to market from Colorado. The great drawback to beekeeping in this region is the long distance from mar-

ket, which necessitates selling in car lots in order to ship economically.

The beekeepers of the western slope have recently perfected an organization patterned after the Colorado Honey Producers' Association, which is known as the Western Colorado Honey Exchange. The new organization handles most of the honey produced in five of the counties on the west side of the mountain, which are not within easy reach of Denver.



R. G. Richmond, the tall bee inspector.

Mr. W. H. Kendle, of Montrose, is president and James Watson, Jr., of Grand Valley, is secretary and manager. In addition to the president the directors are J. J. Durkin, of Lazear; J. D. Caldwell, of Rifle; Frank Snyder, of Colbran, and C. S. Sieg, of Molina. During the past year the new association handled six cars of supplies and 70 per cent of the honey produced in the four counties of Garfield, Mesa, Montrose and Delta. The organization has a membership of 120 beekeepers, who operate 15,000 colonies of bees.

If all the beekeepers of the Rocky Mountain region and the Dakotas were organized it would be possible to get a much better price for the crop. There is not enough of the high quality white honey produced to depress the market if it were properly marketed. A few days since, I passed by a large apiary in western Iowa, where a sign at the roadside offered honey at ten cents per pound. At the same time similar honey is

selling generally at 20 cents per pound at retail and not less than 10 cents in carlots. This particular beekeeper is doing his best to ruin the industry. A ten-cent retail price can only serve to establish a six-cent price in carlots, since all the costs of freight and handling must be paid out of the price received from the ultimate consumer. Until beekeepers are generally organized there will always be a price cutter in every locality who will make it impossible to maintain a fair price. If someone in a nearby locality offers a similar product at a low price he makes the market for the time. For this reason, the American Bee Journal has always been an advocate of co-operative marketing by the beekeepers. We hope soon to see the time when all the large producing areas will be organized and working together.

The Spray Problem

At Delta, Grand Junction and Montrose, the beekeepers told stories of being driven from good locations by spray poison. They have been compelled to move farther and farther from the orchards in order to escape the loss of their bees. Formerly there were only from one to three applications of poison in a season, while now there are eight or more, in some cases. Spraying has come to be almost a continuous process, with the result that the bees are never safe. For a time it was thought that if spraying was not done while the trees were in bloom there was little danger to the bees. Now it is reported that the worst losses come from the poison which falls on the cover crop. At Delta I was taken to see an apiary owned by S. W. Weeks and Son which had dwindled badly in late July. An average of 60 pounds per colony had been extracted a few days previously and the main flow was just in sight, when the bees suddenly began to die. They left the hives in large numbers and crawled about on the ground, being unable to fly. On opening the hives we found that strong colonies



J. A. Green, of Grand Junction.



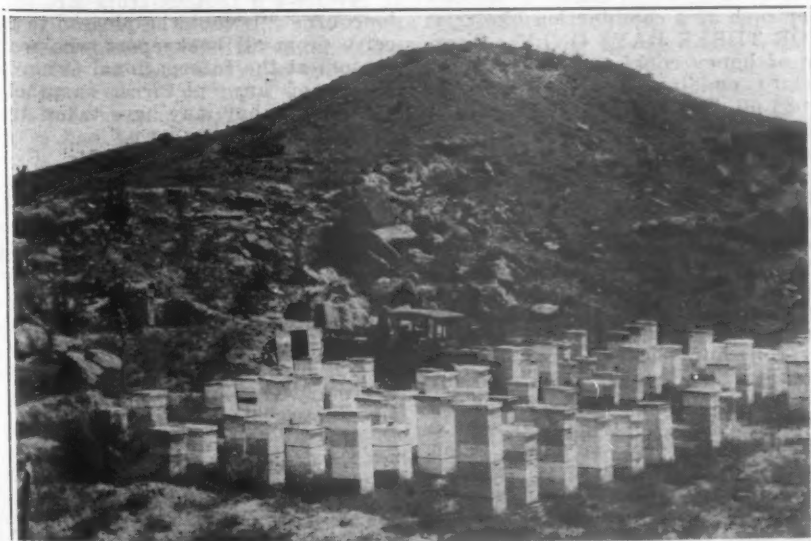
James Watson, manager of the New Association.

had been reduced to small nuclei and it was apparent that no more surplus could be harvested this season.

Prof. R. G. Richmond, State Bee Inspector, is taking a special interest in this problem and hopes to find a remedy for the situation. The presence of the bees is essential to the security of the fruit grower, for without them the setting of fruit is uncertain. In some seasons there will be sufficient wild bees to insure pollination, while in less favorable ones the crop will be light for lack of bees. The Colorado College of Agriculture can render no greater service to either fruit growers or beekeepers than to solve this problem, if there is a solution. In some of the orchard locations, where alfalfa and sweet clover are also available, an average of 200 pounds per colony could be depended upon if the loss from spraying could be avoided.

At Montrose there are enough beekeepers within reach to enable them to have a convention of their own on short notice at any time. I reached that town during the honeyflow when everybody was hard at work in the apiaries. Chancing to meet W. H. Kendle on the street he assured me that he would put me in touch with the local beemen. Although they did not return home until time for a late supper he found enough of them to provide an interesting impromptu bee meeting in the city park that evening. There is much inspiration in contact with others of like interest, and the beekeeper who lives where beekeeping is regarded seriously has a great advantage over the man who is isolated from his fellows of the craft. In company with J. Roscoe Miller, who has kept bees in that locality for 26 years, I visited the apiaries and orchards in the surrounding country on the following day.

At Grand Junction one is in the heart of the Colorado fruit growing region and formerly this was an important honey-producing section as well. Most of the beekeepers have moved away from this vicinity, since it is difficult to find a location far enough removed from the orchards to



One of Caldwell's apiaries where bees are wintered in the cellar.

be safe. One beekeeper stated that formerly arsenate of lime was used for spraying and did little damage to the bees. When arsenate of lead was substituted the trouble began. The arsenate of lead is sweet to the taste and attracts the bees, when it drops to the ground or on the cover crop, as well as on the flowers. Cases were reported where cows had been killed from eating alfalfa cut in the orchards.

J. A. Green is one of the old timers who remains in Grand Junction. Green has been well known to American beekeepers for many years, through his writings. The picture shows him in one of his apiaries more than 20 miles from town. He had 254 colonies in one apiary which is well located. A small stream, bordered with willows, flows past the honey house and provides the bees as well as their owner with water. Green owns the location and has ample buildings for storing his equipment. The force often camps there while engaged in working the bees during the active season. He has several apiaries in the same valley. In spring he moves some of his bees into the orchards for fruit bloom and out again before the first spray. He finds the move profitable, although he has to hustle to do it and avoid loss from poison.

A VISIT TO THE HONEY BOWL AND ITS MANAGER

By Luella B. Lyons.

While spending the week-end with a former college room mate who had married and had a family of her own, I was shocked at her apparent ease in regard to baking day. I noticed she had a cookie jar piled high with seeming home-made cookies and the children certainly did them justice. She did no baking, but when Saturday evening came I noticed my hostess whisper to two of the children and they hurried down the street immediately after to return about a half hour later with a well filled basket. Even then I thought the basket probably contained groceries and yet the grocery boy had just delivered a load at the rear door.

The next day at noon, I discovered my hostess had cut into the most delicious cake I had tasted. Her Parker House rolls were served individually with a small square of honey. Finally I could not resist the temptation to ask my hostess a few questions regarding her splendid bakery sources, and she laughingly answered me, for she had thought I had probably noticed.

The Honey Lady from The Honey Bowl, two blocks away, supplied her with all her bakery goods at a much lower cost than it would have cost her to make up her own. Then I was all curiosity, and I stayed over till Monday to have a talk with this Honey Lady.

A pleasant little woman greeted us at the door, for Mondays were her holidays, unless some special order must be gotten out. This day, how-

ever, she was at her leisure and expressed herself as willing to answer questions.

Left a widow with two children to support and with moderate means, she searched about for employment. Finally a merchant asked her to make some candies for his store trade. She did so, and thus began a business that kept her family needs supplied with the necessities of life. This continued until the merchant died and the store was sold out and she was without a position. That same year her eldest child had come to the town she now lived in to attend college so, as the other town did not offer her any money-making possibilities, she moved to the same town. At her former home town she had attained the name of the "Candy Lady" and her name followed her into the home which was termed "The Sugar Bowl." On coming to this town, she then thought of establishing such a business, but no merchant seemed to be willing to take her output, so she interviewed the Honey Man of the vicinity.

The Honey Man seemed delighted with the idea of her scheme and promised to do all in his power to assist her. She put out a sign, "The Honey Bowl," and called herself the Honey Lady. She advertised thusly for bakery orders that contained honey. Honey cakes, large and small; cookies and puddings as well as Parker House Rolls and honey orders were taken care of. One of her children delivered the products to those who could not call for them. The orders began coming in almost immediately, and soon she was required to hire assistants. The college and manufacturing town proved a source of a very large income and she was sure to take advantage of it.

She also stated that she was constantly on the alert for new recipes and new dishes which would contain honey to offer her customers something different. About every two weeks she would offer something new through the columns of the daily papers, or she would make a bargain offer such as a combination like this: "FOR THREE DAYS ONLY—1 carton of honey cookies and 1 honey custard pudding in your container, for \$1.00. FOR THREE DAYS ONLY, REMEMBER!" This would probably flood her with orders for the remainder of the week, she explained, beside her regular standing orders, which had to be filled if nothing else was done. When asked how many assistants she employed she was forced to laugh, for she said she could hardly believe herself, for she had now seven capable women on the pay roll, but, she remarked, with a twinkle in her eye, "I have paid for this Honey Bowl and have bought out the Honey Man and one of my sons is running that end of the game. I am endeavoring to put away enough money to live on easy street when I am able to work no more—that is a rainy day, you see."

From the looks of her thriving

business, she will have no trouble about not having enough of an income. I went away from her home thinking what a splendid chance for some women such a business was, which was waiting to be organized in another town where such a business could be built up by as persevering a woman as she.

I shall long remember my visit to the "Honey Bowl" and the interview with the quiet-eyed little business woman that was back of it all with her planning.

BLOWING VS. BREATHING ON THE BEES

I have recently come across a statement in your book, "The Honey-bee," about which I will give you my experience. The statement on page 155 is "Above all, never blow on them; they will try to sting directly if you do."

Bees sting me a great deal more than I think they should. When looking for brood that is diseased or for eggs in a comb that is well filled with bees I frequently direct the bees around the comb by blowing on them. This is very convenient when a comb is being held up to the light with both hands and the bees obstruct the view of the brood. The bees move quietly over the comb in the direction in which I blow without making any effort to sting.

E. A. Meineke, Chicago.

(I will call your attention to the fact that the statement which you criticize was made by Butler, 300 years ago. Mr. Langstroth criticised it, too, as you will see by the footnote. But there is a question. Much depends upon what kind of a breath the man has who blows upon them. What would not be objectionable to the bees from a pure breath, might be very unwelcome from one which was unhealthy or loaded with bad odors.—Editor.)

To Those Who Went to the International Congress

We have a request from Mr. Vaillancourt: "I would be pleased to receive from all beekeepers who were present at the International Congress a copy of any pictures, snapshots, etc., which they may have taken during their short stay here."

Send the material to Mr. Cyril Vaillancourt, Ministère de L'Agriculture, Quebec, Canada.

Caldwell County (Mo.) Organizes.

At a recent meeting the beekeepers of Caldwell County, Mo., organized the Caldwell County Beekeepers' Association, with James W. Toomay as President and Clay T. Davis as Secretary-Treasurer. Both men are from Braymer, Mo.

Alabama Meeting

Alabama beekeepers do not forget the meeting on Thursday, November 6, Montgomery, Ala. Go to the Chamber of Commerce Auditorium.

MEMORIES OF L. L. LANGSTROTH ✓

By C. P. Dadant.

IT is not necessary to explain, to the older beekeepers who have read this magazine for years, the reason why the portraits of L. L. Langstroth and of Charles Dadant appear opposite each other at the head of the columns of the American Bee Journal, in every number. But the younger men may ask when this began and why.

This was inaugurated on June 21, 1906, by George W. York, while he was editor and proprietor of the magazine. Why he did it will appear when the connection between the two men is explained. Later, in 1912, he used this fact, as an argument, an irresistible argument with the Dadant family, to convince them that they were the ones to assume the continuation of the publication of the American Bee Journal, which he (Mr. York) had decided to abandon, for private reasons. For, said he, pointing to that heading: "You cannot afford to let it go to anyone else, since the photograph of the founder of your establishment has been at the head of these columns, in company with that of Mr. Langstroth for over six years." It was a winning argument and we felt its strength so fully that we overcame a repugnance to enter the journalistic field. We must acknowledge that we are not sorry of it now, for the publication of this magazine has brought the writer nothing but pleasure, outside of the work which it has put upon him, as a matter of course.

It is hardly necessary to recall the fact that Mr. Langstroth was the man who first devised the convenient top-opening, loose-hanging-frame hive. Before him, frames had been invented in which the combs were hung, but none were practical. Among the best known were the leaf hives of Huber, frames hung upon hinges, opening like a book; the hanging frame hives of Berlepsch and Debeauvoys, and others still less convenient, opening at the rear or at the sides, with doors and sometimes drawers which propolis rendered immovable. Dzierzon had a very simple hive, with only top bars for the combs to hang upon; the combs in his hives had to be cut loose from the walls at both ends, every time the hive was opened. Yet it was with this clumsy hive that Dzierzon managed his wonderful discovery of parthenogenesis and his many observations concerning the habits of bees.

Mr. Langstroth was the first man to devise a hive in which the combs, hanging in frames, were separated from the walls at the ends, as well as from the bottom and top, of the box, by a bee-space, and arranged so as to be lifted separately at will, with the least difficulty. There is no doubt that it was this invention which enabled the American beekeeper to take the lead in honey production and bee management. Similar hives were invented since, by people who

Because of his personal acquaintance with the pioneers, the editor has often been requested to write a series of articles giving intimate glimpses of such old timers as Langstroth, Quinby, Doolittle, Doctor Miller and others who had an important part in establishing beekeeping in this country. This story of his acquaintance with Langstroth is the first of a series written in answer to this demand upon the part of the editor's friends. Suggestions from our readers as to subjects or persons to be included in the series will be welcomed.

knew nothing of Langstroth, but to him goes the credit of the first practical hive.

Mr. Langstroth was a man of wide information. He had received a classical education at Yale. But it is not our purpose to mention that which any student can find out, about his life, by going to the textbooks. We wish to speak of that which is not generally known, giving a few anecdotes concerning him.

He became a minister, but his hobby, the study of insect life, took almost complete possession of him. His knowledge of Latin enabled him to read French readily; so he studied Huber, tried his hive, and in 1852, after making many experiments, he secured a patent upon the hive which he had invented during the previous season. It was the patent which worried his life, with little profit to himself; but it was also this patent which made him acquainted with Charles Dadant. The worry came from the lawsuits in which he became involved, through his manager, Mr. Otis. The American Bee Journal of the early months of 1872, is filled with bitter discussions of whether the Rev. H. A. King, publisher of the Beekeepers' Journal, did or did not infringe upon the Langstroth invention. King held that the Langstroth invention was already covered by discoveries made in Europe previously. It was here that Charles Dadant proved useful to Mr. Langstroth, by coming forward spontaneously, to testify, in the American Bee Journal, of March, 1872, that he had tried and used, in Europe, several of the different hives invented before that of Mr. Langstroth and that not one of them combined the useful points claimed by the Langstroth patents.

The discussions of this subject, coming just at the time of the death of the editor, Samuel Wagner, became irksome to the readers of the American Bee Journal to such an extent that a number of them threatened to discontinue their subscriptions if this question was continued in the columns of the Journal.

To the best of my recollection (I

was 21 years old at that time) the suit was dropped after several years of litigation. Mr. Otis died a poor man and Mr. Langstroth lost his peace of mind. He became attacked with what he called "head trouble," a nervous disease which gave him no respite for a number of years. When I became acquainted with him, in 1885, he had just temporarily recovered his serenity. This was not his first recovery, however, as the reader will see by a manuscript letter, the fac-simile of which is published herewith, dated January, 1881, and addressed to my father, in reply to a request for his photograph. As his handwriting is not very legible, we here transcribe the letter in print.

"Dear Friend: I must trust to your large heart to excuse me for not having replied to your letter. Only within a few days have I recovered sufficiently to allow my mind to recur to the past or to anything connected with bee matters. I hope in a short time to be well enough to have a photograph taken, as I have no satisfactory one. I can furnish you a very brief account of myself—and hope to be able to send it with the photo.

"Your name is always associated in my mind with the memory of Mr. Wagner. With many thanks to you for your great kindness, and regards to your son.

Very truly your friend,
L. L. Langstroth."

It was when I visited him, in 1885, that he entrusted us with the revision of his book, "The Hive and Honey Bee."

How did it happen that we were entrusted by him with the important task of revising and republishing this book, when there were many others among the practical beekeepers of America who would have been glad to undertake the task? I am sure that it was due to the help that had been extended by my father to him, at a strenuous moment, when his credit as an inventor was at stake. But it was due in almost as great a proportion to the advice extended to him, by our departed friend, Charles F. Muth, of Cincinnati. Mr. Langstroth lived at Oxford, Ohio, just 40 miles from Cincinnati. He and the Muth family were very good friends. Mrs. Muth was very fond of him, for when he was in good spirits and not suffering from his brain trouble, he was a very entertaining visitor. He had expressed to Muth the desire of revising his book, called by experts "the classic in bee culture," but woefully behind the times, for it contained nothing concerning the honey extractor, the modern smoker, the use of comb foundation, the honey section, and the modern improvements. Whenever he visited the Muths, he mentioned this desire and stated that he was thinking of asking

Oxford, Jan. 21. 1884.

Dear Friend -

I must trust to your large heart to excuse me for not having replied to your letter - Only within a few days here I recovered sufficiently to allow my mind to recur to the past or to anything connected with the bee-matter - I hope in a short time to be well enough to have a photograph taken as I have no satisfactory one - I can furnish you a very brief account of myself - and hope to be able to send it with the photo -

Your name is always present in my mind with the memory of Mrs. Wagner - With many thanks to you for your great kindnesses - and regards to you too -

Very truly, Your Friend
L. L. Langstroth

The Langstroth letter. It is typical of his writing.

us to revise the book, since we had no interest in any book, having never published anything except the little French textbook "Petit Cours d'Apiculture Pratique" in 1874 and a little pamphlet of some 24 pages on "Extracted Honey." Just at that time, Dr. Miller was publishing his first work, "A Year Among the Bees"; Quinby's active son-in-law, L. C. Root, was publishing his "Quinby's New Beekeeping," which already had had several editions. Alley was publishing his "Beekeepers' Handy Book" and Professor Cook his "Beekeeper's Guide," while the "A B C" of A. I. Root, originally issued in 1877, was repeatedly going through consecutive editions.

Muth heartily commended the venture. I met him at a meeting in Attica, Indiana, that summer of 1885, and he insisted upon my going to

Cincinnati with him and paying a visit to Mr. Langstroth. I did, and there began the negotiations which enabled us to re-write the "Honey-bee."

Mr. Langstroth was in the best of health, just then, for he had had a full recovery from his trouble. He described his sickness to me in the most vivid words, stating that, when he suffered with it, he could put his attention upon nothing in the bee line:

"I could do nothing in this delightful pursuit of beekeeping, for it was evidently that which brought about my suffering, from too much application to the idea of beekeeping and to my invention. The only occupation which I could enjoy was the making of problems of chess, because this took my mind entirely from the question of bees. The nervous feeling

was so intense that even the sight of the big letter "B" was sufficient to cause me a pain."

It was only a few short months, after these words were spoken by him, that Mr. Langstroth relapsed into his "head trouble," evidently from too persistently thinking and talking about bees, when he was well. In fact he could talk about little else, although he was a delightful guest and a great entertainer, for he could tell most interesting anecdotes. Here is one:

We had been manufacturing comb foundation, by hand, for seven or eight years, and had organized our work upon the percentage or "job" plan, our workmen being paid according to the number of pounds of foundation manufactured, instead of paying them "by the day." We explained to Mr. Langstroth, when he visited us, that we obtained more and better work in this way; "piece work" being an incentive to quick motions and personal interest in the labor. "Yes," said our old friend, "I have heard of piece work before. I have seen men working by the day-y-y-y, by the day-y-y-y-y, as if they were going to die-e-e-e. But when they worked by the job, job, job, jump, jump, jump, they could make motions count and were all activity."

Not every man has this habit of working more strenuously when he is paid by the job. I remember having had a stone mason spend a whole week, pointing the joints of a stone wall in a large cellar. On Saturday morning I said to him: "You will have to finish this job today, or I will hire some one else in your place. A carpenter who was making hives for me, heard me say this and quickly said to me: "You could not talk to me in that way, I would not stand for it." Just as promptly I replied: "That is very true, but you are not one of the kind that needs to be talked to in that way."

Canadian Honey Exports

The export shipments of honey from Canada this year indicate a new trend in the honey industry of Canada, which seems to be due to the aggressive methods of the Manitoba Provincial Government in stimulating beekeeping in Manitoba, resulting in increased production, according to a report to the Department of Commerce from Consul in Charge John G. Erhardt, at Winnipeg, Canada. According to official figures Canada exported to the end of May, 1924, 411,790 pounds of honey to the United Kingdom. During the same period, her total exports were 438,885 pounds. In 1923 Canada exported 1,091 pounds of honey to the United Kingdom, and in 1922 only 162 pounds, and her total exports to all countries in neither 1922 or 1923 exceeded 25,000 pounds.



OVERSTOCKING

By J. E. Crane.

I WAS much entertained in an article in the September number of the American Bee Journal, page 418, on overstocking. Now "it is a brave man that dares to stand before the king," and it requires not a little courage to stand up and disagree with such an authority as Jay Smith. While I enjoyed immensely, the enthusiasm with which he writes, for long ago I felt much as he does, the experience of nearly sixty years has led me to take a more conservative view of the subject of overstocking.

It is quite true, as Mr. Smith says, bees will often fly a long distance in search of honey. Bee hunters have told me of lining bees here in Vermont from six to nine miles, and Mr. Harbison told me, nearly fifty years ago, that, when he first took bees down to the south part of California, he soon found them sixteen miles from his yard.

Much will depend on climate and temperature. It seems quite reasonable to suppose that it will wear bees out no faster to fly five miles and load up where honey is very abundant than to fly two miles and then have to visit fifty or a hundred flowers to secure a load of nectar, but either condition will whip out our bees very fast, especially if the temperature is low or winds high.

When the temperature is low, bees usually fly but a short distance, and the smaller the yards the better they will thrive. During dandelion bloom this is very noticeable. A few colonies will fill their hives and swarm, while a yard of a hundred or more hives barely gather enough to live on, and often not enough for that.

Bees have been used about here quite extensively to assist in cross-fertilization of fruit bloom. In cool weather it has been found they fly but a short distance, often only a few rods.

Here in New England we have extensive cranberry bogs. Bees are necessary to produce fruit and it has been found that, the nearer the bog to the bees, the larger the yield of fruit.

But some one will say this is collecting nectar in cool weather. How is it in warm weather?

About four or five miles to the east of my home is a mountain where, some years ago, a fire ran over considerable territory that has since come up to wild cherry. A yard of

bees close by fill their hives from cherry bloom, while bees in our home yard get nothing from it, not even a drop of cherry honey.

Take another example. I live a few miles east of Lake Champlain. At a place where the lake is about two and a half miles wide a beekeeper on the west side found his bees crossing the lake to rifle the clover bloom in the fat pasture on the east side, but so many bees were lost in the water that he moved his yard three-fourths of a mile from the lake and saved his bees, which he thought of more value than all the honey they gathered on the other side. Here we find the limit of flight to be about three miles.

Mr. Smith cites a California beekeeper who thought his bees gathered as much honey from an orange grove, six miles away, as colonies located in the midst of the grove. Let us look at this matter a little. Suppose this orange grower had been of a benevolent turn, and told his neighbors they could have all the oranges they could carry away on their backs. Which do you think would come out ahead, those who lived close by, or those who lived six miles away?

It may be quite true that the Creator has given the bees instinct to fly long distances, but has He given them strength in proportion to the distance they fly? Too often we see them drop at the entrance of their hive, panting and exhausted, and resting before they try to enter their hive. Bees are frail creatures at best and can toil but a few short weeks before they are worn out. We cannot help noting how fast they die if the flow of nectar is light and they have to visit many flowers or fly a long distance to secure a load. But if nectar is plentiful in the flowers, the population of the hive will increase very rapidly and we may look for a good season.

Too often have we been disappointed when bees have had to fly more than two or two and a half miles to find good pasture.

Again, when flowers are not abundant, yet yield freely, a few colonies will thrive where many might starve.

It is interesting in this connection to note how like ourselves in relation to toil and fatigue bees are.

"What kind of a climate is this?" said a man to me in Florida? "In California we could walk six miles

and not feel it, but here if you walk two miles you are all in." I have been informed that bees refuse to go even two miles where honey was abundant in that climate.

It is quite true that in some seasons nectar is so abundant that it seems as though almost any number of colonies could be kept in one place, but they are quite too few and far between to warrant extremely large apiaries in one place, at least here in New England. Vermont.

(Our own experience is exactly in line with that of Mr. Crane, and I cannot help thinking that there must be something in the climatic conditions which cause bees to fly greater or lesser distances for honey. We have had bees actually starving on the dried-up hills, within four and a half miles of an abundant crop growing on the previously overflowed bottoms. Apiaries five miles apart usually harvest entirely different crops in quality, color and quantity.—Editor).

Imports and Exports of Beeswax and Honey

The Government reports give interesting figures on the imports and exports of beeswax and honey for the year from June 30, 1923, to June 30, 1924. This would include the period of the crop for 1923. Let us see where some of our honey went.

The total exports of honey were 1,921,815 pounds. The previous figures were 2,086,008 pounds, not a very great difference. The great majority of it went to the United Kingdom, 1,117,348 pounds, which was about seven times more than that to the nearest competitor, Germany, with 166,714 pounds. Norway and Denmark were also good buyers. Belgium purchased considerable.

Imports totaled 4,758,543 pounds, much more than we sent out of the country, tariff and all; 2,763,498 pounds came from Porto Rico and 1,646,857 from Hawaii.

We sent 127,657 pounds into Canada and brought back 59,641 pounds, a balance of about two carloads in our favor.

Of beeswax, we brought in 3,324,850 pounds about a million pounds less than the previous year, and sent out only 136,080 pounds, most of it to Canada, considerable to Spain and some to England and New Zealand.

Of the imports, Portugal sent 1,019,931 pounds; United Kingdom 328,739 pounds, and similar amounts from Cuba, Chili and Brazil.

Forecast Florida Citrus Fruit

The commercial orange crop of Florida for shipment during the season of 1924-25 is forecast by the Department at 13,400,000 boxes, or 1,000,000 boxes more than the shipment from the record crop of 1923-24. The commercial grapefruit forecast of 8,600,000 boxes for shipment also is a record, and exceeds the shipments of 1923-24 by 600,000 boxes.

HOW OLD IS THE BEE?

By H. v. Buttel-Reepen.

SURELY this question has nothing to do with practical beekeeping, but I think it is, nevertheless, very interesting for beekeepers too, at least for those who are fond of nature and who like to ponder over the mysteries which are connected with the existence of the peculiar kind of colony of our pet insects and who further want to know something more about the origin of it. Is it not strange that some few kinds of bees flock together, live in colonies, whilst so many other bees live quite alone, single, solitary?

It is perhaps true, that many apiarists do not know that there exist solitary bees, but there are thousands of sorts of them in North America which live quite alone, i. e., there are only two sexes; males and females come together in the pairing time, the males die away very soon and the fecundated females remain single, just as we see it with solitary wasps, beetles, butterflies, etc. Each female makes a separate nest and provisions it by her own labor, and in many cases a new nest is made for each egg. The nests are hollowed out in the ground, in wood or in the stems of plants or the hollow halms of reed are used.

If we want to know a little more about the question, "How old is the bee?" we have to look back many thousands of years, and it has to be borne in mind that all questions which concern foregone geological periods cannot receive a strict and precise answer, and the replies are more or less hypothetical, especially if they are not evidenced by petrifications.

We have to presume that the first arising of communities of insects (Hymenoptera) very probably begins at the end of the Cretaceous Period.

As is well known, the strata of the earth's crust do not in reality lie under one another in the horizontal position, as they may be supposed to do in a theoretical section. They have been in most cases, much distorted out of this original position by earth movements. Very often we find them projecting up almost vertically, or forced through each other. Hence it often occurs that deep-lying strata crop out at the surface, and for the most part it is only through this distortion of the rocks that we are able to learn anything of the earth's crust.

It is the well-founded opinion of specialists in this matter, that bees are a branch which separated from the Fossores (a certain kind of solitary wasps). This separation occurred very likely at the end of the Cretaceous Period.

I may mention here, that the instincts and habits of this still living family of wasps have been described by an American author in such a marvelous way, that I cannot but

recommend this book to every apiarist.

It is a pity that, up to now, no fossil bees have been found in the lowest stratum of the Tertiary Time; the Eocene, only fossil Termites (white ants) which are born into a community, too, give us a sign that amongst the insects the forming of colonies, of associations, really did exist already.

But in the Oligocene Time we meet already many fossil solitary and social bees. The same has to be said of the Miocene, and in the Pliocene the typical honeybee (*Apis mellifica* L.) turns up already, but this find seems to be a little doubtful.

If we now repeat the question: How old is the bee, we come to the following conclusions: The duration of the periods from the Eocene up to the recent strata is, according to the minimum estimate of the specialists, about three million years, and we may add some more millions if we go downwards into the Cretaceous Epoch.

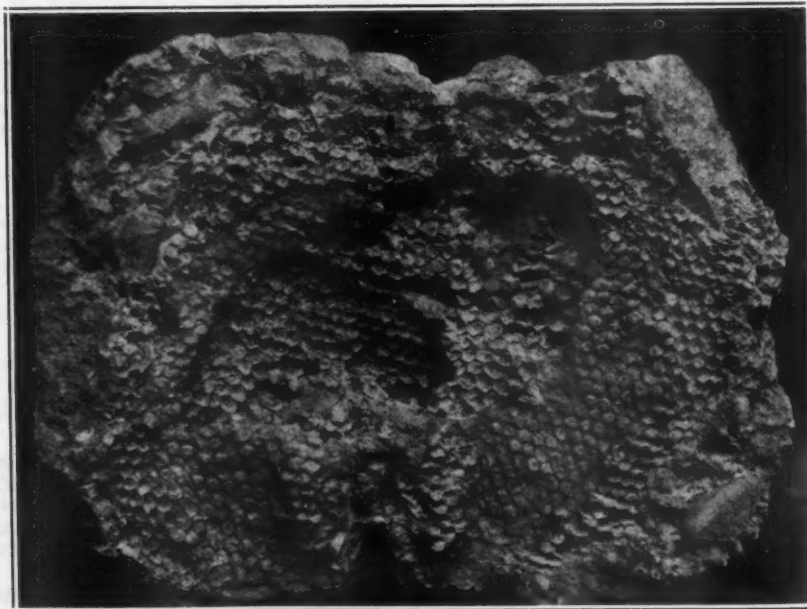
During this enormous length of time the evolution from a solitary wasp to solitary bees and further to social bees took place in the struggle for life. The way of this evolution is plastered with riddles, but there are many supports, which grant us sufficient proof that this is right. It is quite impossible to give a detailed statement of the hypothetical transitions in a short article, but I may mention only some short hints:

The very lowest of the solitary bees resemble so much some kinds of solitary wasps in the way of nest-building or even partly in the whole appearance, that the non-connoisseur is inclined to say that they are wasps and not bees; further, there

are some species of solitary bees (*Halictus*), which show during a certain time of year, already, social behavior, social instincts; on the other hand, there exist social bees (Bumblebees), which live solitary during a certain period of year (winter time). There are, even today, still bridges which lead from solitary forms to social ones. None of the specialists who work in this sphere doubt that the ancestors of our social insects were single, living in past times. There are only different opinions about the time and manner of this evolution.

It would have been of great interest, if a petrified comb had been found, perhaps in the Oligocene of Miocene Period, as it would be the certain proof of social living already at that time.

Only some months ago a supposed "important" and anyhow very instructive discovery was made at Mistelbach, a small town not far off Vienna, the capital of Austria. A well-known apiarist and renowned queen rearer, Mr. Guido Sklenar, detected a fossil comb in the museum of this town, which had been kept there about 17 years rather unnoticed and disregarded. He gave a report about this discovery with the reproduction of a photo of the comb in his bee journal, "Mein Bienenmutterchen." I wrote at once to the discoverer to have a photo, so that the details could be studied. Mr. Sklenar had the kindness to write that the comb had been found two meters below the surface. Mistelbach is situated at the brim of the so-called "Wiener Becken," a former sea (during the Miocene Time), with brackish water, and its deposits (Mediterranean deposits) and Conglomerate rocks belong to the Miocene strata. In the same stratum where the comb was lying, fossil bones of elephants (Mammoth and Mastodon) have been found, and in the neigh-



Fossil nest of wasp.

borhood many fossils characteristic to these strata.

In the first instance one was inclined to hope that this comb really was a valuable witness, as it was the decided opinion of the discoverer; but after having gotten small parts of the comb and studying the photo, I came to the following result:

The comb is made by wasps and not by bees, as it is only one-sided. It consists of calcareous matter, made by calcareous water (incrustating water) in forming stalactites, etc. In some of the cells the yellow and partly brownish rings of horny substance (chitine) were still present as well as parts of a head with the eyes, etc. I could define the inhabitants of the cells by these remains very likely as *Vespa germanica* F.

The comb is therefore recent and may have perhaps an age of some twenty or thirty years, or even some hundred years.

A SCHOOL FOR A CUSTOMER

The public schools have introduced the milk-drinking habit in their curriculum—why not introduce honey in the same manner? There is a small school in Illinois that instead of milk, it sells honey and rolls for recesses and noonday meals for the scholars. The butter is donated by the parents of the pupils and the rolls and honey are purchased from the local dealers. These are made up into sandwiches and one girl in the grades is selected each week to be the tender of this work. It is her duty to cut and make these sandwiches, and she usually selects an assistant to take care of the money derived therefrom. The children make a meal from these, often.

Can you convince some school near your bee farm into such a system? The children will then demand the product at home, after having once acquired such a habit. What more could you ask?

Luella B. Lyons.

Oregon Meeting.

The annual meeting and conference of the Oregon State Beekeepers' Association will be held in Portland, probably at the Chamber of Commerce, on November 5 and 6. The date of the meeting has been set so that beekeepers in attendance may have an opportunity to visit the International Livestock Show at the same time. The beekeepers of the state will be especially interested in the International Livestock Show this fall because of the fact that the State Association is putting on an extensive display and demonstration of honey and food.

Queen Cells Among Palestine Bees

Mr. Baldensperger tells us that the Palestine bees are prolific rearers of queen cells. He mentions counting 368 in one colony of Holy Land bees that was preparing to swarm. Wouldn't it be fun keeping down swarming in a yard of 100 colonies of these bees?

CO-OPERATIVE ORGANIZATION

By E. G. LeSturgeon.

IN his wonderful work on the co-operative organizations of the Pacific Coast, Professor Vaile has divided them into two main classes. Those which take title to the product and who market the product as their own and those that permit the title of the product to remain in the name of the individual producer. You are all familiar with the Farm Bureau-Federation which requires the signing up for a period of years of the crop, and when this crop has been turned over to the organization it actually belongs to the organization. There is then the other type of co-operative organization in which the produce belongs always individually to the producer himself until it has been marketed and the proceeds distributed.

I do not deny that this is a fair division of co-operative organization. But at the same time, for the purposes of illustration, I prefer to divide them into three separate classes in another way. One man can divide the day into two portions—day and night. Another can divide the day into four portions—morning, afternoon, evening and night. Each of them is correct. I shall therefore attempt to give you my division of co-operative organization into three parts.

The first is the local unit. This is the small co-operative group built up in a certain valley, a county or a contiguous territory, where a certain commodity is raised. For instance, a small group of farmers who unite and build themselves an elevator. The small group of dairymen who unite and build a co-operative creamery. The fruit growers of a certain small valley, that pool their purchases and their sales in a common co-operative unit. The organization which markets the potatoes grown in a certain county. In fact any small independent group that takes part in any co-operative activity. This group is the largest in numbers of the three and a great majority of all the co-operative work of the country is done in this way.

The second group or division of co-operative organization is the federated unit or the combination into a state-wide, or some other geographical division, of the small local units handling a certain commodity. The United Fruit Growers' of California is an example of this type and often we see the small elevators of a wheat-growing district combined together in a large federated unit having distinct marketing function and perhaps even going into the milling business. Or we may see the growers of a certain kind of fruits between two large mountain ranges covering parts of two and three states organized together for the marketing of their products. This is the second large division of the co-operative activities

and is also the second strongest and the second in the amount of products that it handles.

The third group is the all-embracing unions, such as the tobacco growers of the southeast, which attempt to sign up by contract for a number of years all of the producers of a certain commodity and to have absolute control of the marketing of this crop. The Farm Bureau Federation is another operating in the South, and trying to sign up for years in advance the entire cotton crop. The United Wheat Growers of the West, and some of the larger exchanges of California are examples of this third and most rapidly growing type of co-operative effort.

Sales Management

One of the greatest dangers of the co-operative organization is the failure to pay its management and employees adequate salaries. This is well illustrated by a story that has been going the round. A salesman or investigator sent out by one of the large mail order houses is reported to have returned to his employer with all the evidence of considerable excitement and asked for a personal interview. He took his employer aside and told him that the mail order business was doomed. That it is time that the organization devoted energies and capital to some other business because the time was swiftly approaching when mail order houses would find themselves absolutely without custom or trade. He pointed out, to prove his assertion, the enormous growth of co-operative organization over the country. He told of the countless instances where farmers in localities and in states were ordering their supplies on a co-operative basis and were selling their products by co-operative effort. He painted the gloomiest picture possible.

After he had finished the magnate said to him: "Son, there is no reason for you to be alarmed. Whenever you find these co-operative organizations bidding in the market for men; whenever you find them seeking for men whose capabilities are such that they can earn \$20,000 to \$50,000 per year, then you may fear that our business has reached its end, and then I want you to come back and tell me. But as long as you find men on a \$3,000 salary doing \$5,000,000 worth of annual business there is no reason for us to worry."

The above is true, and it shows the greatest weakness of the co-operative movement in America today. Big business buys brains and is willing to pay any price to obtain them. Co-operatives are not willing in a great many cases to pay their executives, and the executives go into the regular channels of trade, leaving the unfit

and very often the dishonest at the head of the organizations.

Why Then Co-operate?

No co-operative organization that has been successful has ever been founded upon the idea of a voluntary coming together of a number of people, with a plan worked out in advance, proceeding to co-operate. Men do not co-operate because they want to. Whenever the conditions in a certain industry or whenever the producers of a certain commodity find it impossible to go forward with the old methods, then is born a desire to find some other way of accomplishing the things that civilization has failed to accomplish for them. As Chas. J. Brant, chief consulting specialist of the Department of Agriculture, Washington, D. C., said, "Co-operation is, after all, only another way of doing business."

The channels of trade were developed by civilization without any plan. They grew up gradually and naturally and as society has become more and more complex they have apparently failed or broken down at certain points and have given rise to the necessity for the organization of co-operative movements which function merely to facilitate the assembling and distribution of the commodities in question. Whenever, therefore, the self-interest or best interest of the person or the producer brings to his consciousness a realization of the fact that co-operative effort will assist in a solution of his problem, then, and then only, is a co-operative movement indicated, and then, and then only, will the launching of a co-operative movement prove successful. Co-operation cannot be forced onto anyone, neither will anyone co-operate willingly. To be successful, co-operation must be the result of necessity.

The Three Fundamental Principles

There are three close-lying and fundamental principles under the activities of any co-operative organization that is to be successful. The first of these is that there must be close personal contact between the individuals making up the organizations and the central agency or marketing head. In the small local unit groups of co-operative organizations this is easily accomplished. Every member of the local unit usually knows every other member, and if he desires to do so can go to the station and see his fruit, or his crate of vegetables packed beside the crate or barrel of his neighbor. He can have absolute, close contact with all the activities and troubles of the organization, and his loyalty will be increased as his participation in its difficulties becomes more frequent. With the second group, the federated unit, close personal contact is somewhat more difficult to obtain, and as in the case of the Colorado Honey Producers' Association, the manager makes actual trips to the various loading stations while the honey crop is being prepared for market and makes per-

sonal grading inspections at practically every station. This increases the possibility of close contact between the manager and his membership and can have no other effect than to strengthen the organization. In Texas, this is somewhat more difficult on account of the magnificent distances of the state, and close contact can only be had by means of circular letters, bulletins and the 2-cent stamp.

The second great fundamental is that the organization must limit itself to the handling of but one crop, and this crop must be the chief product and source of revenue of the producing members. Only one commodity or its closely related commodities can be handled by a co-operative organization successfully. The failure of the old Farmers' Alliance movement was its effort to handle everything in sight that the farmer might want to purchase or anything that the farmer might have to sell. A beekeeping co-operative association, for instance, could handle honey and wax and may handle the supplies necessary for the production and marketing of a crop of honey, but it should not handle feed stuff nor fruit and vegetables. A wheat growers' organization can well handle farm machinery and, especially wheat-growing machinery, but it should not handle spinach or cotton gins. Only those co-operative organizations have been successful that have limited their activities to one crop or their very closely related articles.

The third great essential fundamental is that neither the organization itself nor its officers or members must be permitted to speculate in the commodity that the association handles. The managing officers, its Board of Directors and the individual members of the association ought to refrain from speculation. Nothing but disaster could follow today the speculation in cotton, for instance, of the officers of the Farm Bureau Federation handling cotton. The third great fundamental, therefore, is that we should not speculate in the commodity that the association handles.

Co-operative movements will be born and some will fail, just as some banks and some industrial enterprises fail. But where there is actual need of co-operative effort, and where producers realize that need, co-operation will prove successful, provided, of course, that the three great fundamentals, above pointed out, are observed and carefully adhered to.

Well, Now, This is Pleasing

From far-off Honolulu, Brother James writes: "Sometimes the Burr Comb page is left out of A. B. J. If the Dadants don't know what to say, let Pellett tell us something about his friend Potter on his hobby beehive."

Burr Combs started as an experiment, but it seems to be well grown now. What do you think?

HUNTING BEE TREES

By D. M. Cranston.

I am writing on this subject because I believe the system used by an experienced bee tree hunter will be of interest to many readers of the American Bee Journal. And also, because commercial and other beekeepers, who have not coursed, found, robbed and hived bee-tree bees, have missed the sporting side of man's experiences with the honeybee.

Hunting bee trees is a health-producing sport. It is romping in the fields and woods. It is enjoying the sunshine and the shade. It is interesting because it is a puzzle. It is educational, because it is nature study.

An outfit to include the following is needed by bee-tree hunters:

A 3-pound lard pail with cover, for use as a bait pail. A wad of dry wrapping paper, large enough to half fill the bait pail. Two round pieces of honey comb that will fit in the bait pail on top of the wad of paper. Two bottles of honey, one diluted one-third water, and the other pure honey for extra supply. Two one-half-ounce bottles of pure oil of anise. Keep one bottle in the bait pail for use in case of accident to the other. A half ounce bottle of cardinal red, in the dry, flour form. One kitchen flour sifter, with the crank and inside revolving part removed. One piece of cardboard 8 inches square, and a watch.

To the bee-tree hunter the following tips are important:

Buy the pure oil of anise only, and do not dilute it. It has no worthy substitute. The pioneer practice of burning honey comb gave way to the use of anise long ago.

Choose a location for your bee bait that will give you an unobstructed view of the loaded bees, as they fly away on the course to the bee tree. Extra time spent to learn the true course from bait to bee tree is time well spent. Following a false course is both useless and a waste of time. When you start from the bait location to follow the bee course to the bee tree, do not deviate from the true course. Holding to the true course, as you advance, is no less important than it is to know the course before you start.

Prepare bait for the bees to work on by applying sufficient oil of anise to the wad of paper to highly scent it. Replace it in the pail with the honey combs on top. Pour some of the diluted honey on the top comb in the pail. Then place a small wad of paper, in which several drops of oil of anise have been absorbed, between the pail and its bail. The bait is then ready for the bees.

Do not use honey produced by diseased colonies for bee bait. The bee tree hunter who does so is an enemy to the beekeeping industry. The possibility of spreading bee diseases in this manner is not appreciated to the extent warranted. Your anise scented bait will attract bees from apiaries as well as from bee trees, and it

would be criminal for you to spread bee diseases among them.

Hunting bee trees during the spring months is less satisfactory than it is during the summer and fall months. There are fewer bee trees then, and it is more difficult to induce bees to work on bait in the spring. The best way to get bees to work on bait in the spring is to prepare your bait pail and hang it up in a shade tree in the yard or fields. The bees will find it in a day or two, and you can then move the bait to a location from which you can better see the direction the bees go.

It is also difficult to get bees to work on bait during a heavy honeyflow in the summer, but they can be induced to do so then by using your cardboard and flour sifter as a bee trap in which to trap bees from flowers and transfer them to the bait pail. This operation is easily accomplished after a little practice. When you have one or more bees trapped, place the trap, bottom up and with cardboard underneath, on the pail. Carefully pull the cardboard out and place it on top of the trap. This shuts out the light and, if given a little time, the bees will go down and begin loading up on the bait. Repeat the process several times, or until the bees begin to return to the bait.

The most interesting part of hunting bee trees begins when you have bees at work on the bait. You are then ready to mark, watch and time a couple of bees to learn the direction and distance they go from the bait to their home, or homes, as the case would be, if both bees should not go the same direction. If this should happen, and it does often happen, you would then have an opportunity to work up two bee courses at once.

To mark bees, first procure a dry weed stem and pinch away the side at one end to make it in a spoon-like shape. With this, dip a little dry paint out of the paint bottle, extend it over the bait pail, and carefully lower it until it is two inches, or less, directly over a bee that is at work on the bait; then roll the weed stem between your thumb and finger until the paint falls on the bee. Use more paint on one bee than on the other, so you will be able to distinguish one from the other.

The method used to determine the distance bees go from bait to bee tree is as follows:

Watch a loaded, painted bee leave the bait, get its course, note the time it started, and then watch for its return. If it is gone seven minutes, the distance to the bee tree is about one-half mile. If it is gone eleven minutes the distance is about one mile. If gone fifteen minutes, the distance is about one and one-half miles. In a seven-minute course, four minutes are spent by the bee on the wing going the half mile to the bee tree and returning to the bait. The other three minutes are spent by the bee in entering the tree, unloading and in getting out of the tree to start on the return trip to the bait.

In the one-mile, or eleven-minute



THE MITCHELL TORNADO

Here is the picture of what was left after the tornado destroyed Ed. Mitchell's home at Castalia, Ohio. We spoke about his trouble on page 443,

September issue. Beekeeping friends have sent him quite an amount of money in donations, so he can get on till he has a chance partially to recover.

course, eight minutes are spent by the bee on the wing and three minutes in the tree.

In the one and one-half mile, of fifteen-minute course, twelve minutes are spent by the bee on the wing and three minutes in the tree.

This method enables a bee-tree hunter to tell whether a bee course goes to a tree in nearby timber or to a tree in a second tract of timber beyond the first. It also enables him to tell how far to advance on a bee course before beginning to search trees for the bee tree.

When you have learned the course and figured out the distance the bees go from the bait, cover and take up the bait pail with the bees that are in it and follow the bee course to within a few rods of where the bee tree is supposed to be. When you have arrived there, place the bait pail on a log, take off the pail cover and let the bees work up from this new location. Then you are ready to advance farther on the bee course and make your find. But hold to the course and search only the trees near you as you go.

Sometimes thick foliage and cloudy weather make it impossible to see the bees at the bee tree from the ground. In this case, move the bee bait to the nearest opening in the timber to the right or left of the course and work up a cross course. The bee tree will be found near where the two courses cross.

If yet unable to see the bees from the ground, climb a tree near where the courses cross and you may possibly see them, either in the tree you are in, or in one near you.

This is the system used by the writer in finding several hundred colonies of wild bees. Some were found in logs, some in stumps and some hanging to branches with only a cluster of foliage to protect the bees and their honey from the elements.

When a bee tree is found, the finder should respect the rights of the owner of the tree. He should not cut down a fifty-dollar tree to get five dollars or less value, in bees and honey. Bee tree hunters are guilty of having done that too often in the past. If you cannot climb a valuable tree and take the honey out of it, standing, forget that it is a bee tree.

Wisconsin.

QUEEN INTRODUCTION

Very often the success or failure of some beekeeping plan depends entirely upon some seemingly insignificant part of that plan. This you intimate in the footnote to Gilbert Barratt's article, "Laying Workers—Queen Introduction," in April American.

My observation convinces me that the need of the queen for food is the determining factor in the Simmins plan of queen introduction.

The metabolism in a queen in full lay is rather rapid and she quickly shows suffering when deprived of food. However, keep the same queen caged for a few days, then remove all food from her, and the time when she will show distress from lack of food is greatly extended.

After a rather limited number of tests, my experience is, any queen can safely be introduced by the fasting method provided she is obliged to fast long enough so that she will immediately ask for food when liberated in the hive.

When egg production is rapid, a queen will starve within a comparatively short time. When egg production has ceased, as in the case of a traveled queen, she may show no marked discomfort after fasting an hour.

Keep the queen without food until she shows a weakness and sluggishness in her movements and the plan will work.

E. G. Carr.

THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

WINTERING IN BIG HIVE

Can a strong colony in Dadant hives be carried through winter safely in the brood chamber or hive body alone, or is it better to provide a shallow super with honey for a food chamber? It is understood that the colony be properly protected and insulated otherwise according to climatic conditions.

WISCONSIN.

Answer.—The so-called "food chamber" is a new recommendation, for Langstroth 9 or 10-frame hives, because it has been recognized that colonies in those hives do not always have a sufficiency for winter. But the Dadant hive contains enough space for plenty of honey, for wintering, if this space is sufficiently filled. It is very much better to have all the necessary honey in the brood chamber, for spring breeding. Had it not been recognized that the Langstroth frames are too shallow for this, there would have been no need of using a food chamber.

MOVING SHORT DISTANCE

I want to move 12 swarms of bees 500 feet. Which of the following would be the better?

Move them three miles away this fall and return them in a week to the desired location, or pack them this fall and in the heart of the winter move them direct?

NEW YORK.

Answer.—Moving your bees twice will be a great deal of trouble, but if you don't mind it, it will be safer than waiting till winter and moving them at that time, for the following reason:

If you move them during cold weather, there will be nothing to inform them of the change of location, when the weather warms up, although you will help matters by placing a slanting board in front of the hives at the time of their first flight. But it is better, if you move them a short distance, to disturb them greatly at the time of moving and release them while disturbed, as it gives them a feeling similar to that of swarming, and they are more apt to recognize the spot when they first issue. So it is as well to remove them when the weather is still warm enough for them to fly. Another thing you can do is to leave on the old spot one or two of the weaker colonies, as the returning bees will join them. Then move these the following day. You will lose but very few bees, for bees that have been lost once, are apt to look carefully the next time.

DRYING WET COMBS—FUMIGATING

1. What is the exact method followed in the Dadant apiaries in getting the wet extracting combs cleaned out by the bees? Do you let just a few of the colonies do all the cleaning, or have each colony clean its own combs? And when these combs are cleaned dry will the bees mostly leave these empty supers, or if not do you remove them by use of the escape, or smoke them out? And also, do you find it necessary to take any precautions against robbing while these combs are being cleaned?

2. I stack my empty extracting supers up in tight piles and fumigate them, but it seems a few moth larvae will get in and do some damage anyhow. I have seen it stated that the wax moth lays its eggs between the edges of the supers and the larvae

work their way in when quite small. Do you find it necessary in practice to wrap paper or something around the piles of empty combs in addition to fumigating them?

INDIANA.

Answers.—1. When there is any danger of foulbrood, we let each colony have its own combs back. But if there is no danger, we give the combs, two or three supers each to the colonies, sometimes giving a colony which is short some of the most sticky combs, so they may save what is in them. When cool weather comes, the bees usually leave the supers for the brood chamber below. Sometimes, however, a very strong colony will continue to occupy the supers. In that case, it may be necessary to use the escape or to shake out the bees. The former method is preferable. As to robbing, it is always well to provide against it, by putting the supers back in the evening and closing any cracks that may show, in defective spots, with wet clay.

2. If you do not remove the supers until just the time for putting the bees in winter quarters there will be little danger of the moths. But there may be eggs laid in the joints of the supers, as you suggest. But we have never found it necessary to stop those joints with anything after the end of October, when the honey houses get cold, as what worms may hatch will not have opportunity to develop before winter. But combs that remain in the honey house, from September on, may need special attention, before winter. We never had much trouble, if we kept an eye on the matter.

VINEGAR MAKING—MEXICAN BEE

1. Is the manufacture of vinegar from cheap honey a success and, if so, please send instructions for a commercial plant.

2. I am told by a Mexican, living in Mexico, and interested in bees, that in the South a little black honeybee builds a nest like our wasp, on trees, entering at the top and depositing honey at the bottom, from which honey flows if a hole is made in the nest. He tells me that as much as a quart to a gallon of honey is found in one nest. I am interested and wish to know about it.

Answers.—1. Two pounds of honey to the gallon of water makes good vinegar. The fermentation is induced first by using fruit acids such as grapes or apple juice. At the present time a commercial plant to make vinegar must have some sort of license from the prohibition authorities in this country and there is some red tape connected with it.

2. The Mexican bee is the *Melipone*, a small stingless one. But it is not suited to our climate. We do not believe you would find it interesting. They cultivate our "*Apis mellifera*" in Mexico and do not have much to say about that little *Melipone*.

MOVING HONEY FROM COMBS

During the first week in September my bees put a lot of nectar in combs. There all those combs set uncapped ten days ago. I shifted the bulk of this stuff into 13 hive bodies and placed them over empty bodies on five hives that had not sufficient honey for themselves. I hoped they would rob out the unsealed stuff and provide themselves.

I expected them to take off the sealed remainders. Even this did not work and there the stuff sets in practically the same condition. Of course we have not had a killing frost, but there has been practically no nectar brought in. If I take a lid off for three minutes the bees begin to fly at those combs, but those bees to whom the hive bodies were given do little or nothing. Have you anything to suggest?

NEBRASKA.

Answer.—There are two possible ways to proceed. The first is to place the hives containing those combs of unsealed honey under, instead of over, the hives to be fed. There will be more risk of robbing, but if you give only a limited number of combs at a time, and reduce the entrances of those hives, they will probably decide to move that honey to safety.

The other way would be to extract the honey out of those combs and feed it to them, in feeders, above their brood nest.

It is possible that those colonies are not strong enough to keep the hive warm with so much open space above them. But usually bees like to put their honey close to their brood and just above it. When it is below and next to the entrance, there is a very strong tendency to move it up.

Whichever way you do, it is quite probable that in handling the honey over, they will ripen it. If there is any doubt about that, it is yet time to feed them some sugar syrup and keep the honey for next spring's use or extract it for sale.

WINTER EXPOSURE—CELLAR ENTRANCE

1. One of my hives was tipped over one night and lay that way until morning. It was about 20 degrees above, but the hive was covered with carpets. Would this harm the colony any?

2. Should the entrance block be on the hive when wintering in the cellar, or should the whole entrance be wide open?

MINNESOTA.

Answers.—1. If there were no combs broken, and no bees killed or only a few, it is not likely that the colony will be injured. But you should not allow it to happen again. Those accidents often happen when cattle are allowed in the enclosure of an apiary. I called once upon a beekeeper who kept his calves in the bee enclosure, and four of his box hives were lying on the side, evidently kicked over by the calves. We straightened them up and no harm resulted.

2. We leave plenty of ventilation to the hives wintering in the cellar and have even taken them without the bottom board. They need ventilation to keep the combs from getting mouldy.

HONEY SEEPAGE

Do you know of any way to keep extracted honey from seeping out under the lids of glass containers? I have some trouble in that line and surely would be glad to learn of a remedy.

PENNSYLVANIA.

Answer.—Paraffine at a low point of fusion with some fatty substance in sufficient proportion to make it soft would probably serve the purpose if used on the under side of the lids. We used to employ beeswax under the lids of our tins until we bought the friction top cans. The only trouble with beeswax is that it is too brittle when cold. The only objection to a fatty substance is a possible odor that would disparage the honey. If you can use something without odor and just soft enough to stand cold weather without becoming brittle, you will have what you want.

FEEDING DISEASED HONEY

1. About a year ago I wrote you in regard to feeding my bees some fermented honey. I carried that honey over to this spring. I put the fermented honey and a little honeydew into my honey tank. I heated the honey up to 212 degrees F. and kept that heat for one hour. I turned the live steam into the honey tank. When the honey cools you would never know that it had fermented. I melted some cappings for a friend. I discovered American foulbrood in some of his colonies. The long boiling is only a precaution to play safe with my honey, because I may have mixed some of his honey with mine. I fed many colonies 15 pounds of this honey. They sure have done wonderfully in brood rearing; 40 of my 60 colonies need second stories at once.

Would you be afraid to feed diseased honey, provided it was thoroughly boiled for one hour?

2. This year I am planning on mating my queens in the top story of the colonies where they are to lay for a year or more. My plan is to be carried out in the honey flow. I will raise a number of queen cells and when same are 12 days along from the eggs, I will go to my colonies, take one comb of sealed brood and put same into top super over an excluder. I put one queen cell on this frame of brood and slide the super ahead and leave an entrance at front or back so queen can mate. In two or three weeks I will kill queen below and take frame of brood and young laying queen and put her into lower story in place of old queen. This will save starting nuclei, and my queens will already be introduced at same time with very little danger of losing the young queen. I have had splendid success in cell building over a laying queen with a queen excluder between. Cells are started in a queenless colony. I have been raising my queens from my most prolific stock, and I find a great change in the strength of my colonies now, compared to what they were once. The change is for the better.

3. At our Rockford, Illinois, meeting last fall, one of our members made the assertion that a queen must mate in 10 days to two weeks, if she is to be serviceable for any length of time. He stated that queens three to four weeks old before mating are no good whatever. What has been your experience with such queens?

ILLINOIS.

Answers.—1. You certainly did well if your honey has lost the fermented flavor by boiling. But I can assure you that an expert in sweets would be able to tell that the honey was more or less damaged and would not offer much of a price for it. But it is certainly fit both for human and bee consumption. Your method was good.

2. The method you give of producing queens is same as the one recommended by Mr. Pellett and mentioned at different times. It is a slight change from the Demaree swarm prevention, as far as producing young queens is concerned.

3. The member is correct who made the statement that a queen is of no value if mated after 3 or 4 weeks. Huber found out that such queens always proved to be drone-layers. We believe that most of them do not succeed in mating, but remain virgins. A queen should mate within 3 to 8 days after birth and should lay within 3 or 4 days after that, in normal circumstances.

QUEEN EXCLUDERS—WIRING SHALLOW FRAMES—LAYING WORKERS

1. I am using Jumbo hives with ten frames. Is it necessary to use queen excluders for extracted honey, produced in the shallow extracting frames?

2. Is it necessary to wire the shallow extracting frames for extracted honey production?

3. I have two colonies that are queenless, and have developed laying workers in some number to each hive. Can you give me a good plan to introduce queen to them? I have read that they will not accept a queen when laying workers are present. If I could secure a small swarm for each hive and shake the swarm in front of each hive, would this swarm go in with their queen and stay and straighten up matters?

TENNESSEE

Answers.—1. We never use queen exclud-

ers in the production of extracted honey. If the brood chamber is large and the super does not contain any drone combs, the queen will seldom go up into the super.

2. We never wire our shallow extracting combs. There is too little depth to cause the foundation to sag, unless it is not well fastened at the top.

3. Hiving a swarm into a hive with drone-laying workers is good, provided the colony in which the swarm is hived is weak. If it is strong the bees might kill the new queen. But I never had any difficulty in introducing a queen to a hive with drone-laying workers when I used a queen fresh from the hive and in good egg-laying condition. It is the queens which are received by mail that are in danger from the drone-layers. If you follow the instructions given at the foot of page 222 of the May number, you will have no trouble. At any rate, I never did have any trouble. However, there are very few colonies with drone-laying workers that are strong enough in bees to take care of the eggs of a good queen. Usually the colony is too weak to be worth anything.

BIG HIVES

I have been studying about big hives for the last two years and last spring transferred a few colonies in Modified Dadant hives. I can plainly see that the deep frame is better than the standard. But it appears to me that 11 frames is not enough. I have also read in the bee papers that others think that the 11 deep frames are not large enough for the brood chamber.

On page 765 of December Gleanings for 1921, I read of Porter C. Ward, of Allensville, Ky., after visiting your apiaries, going home and using a square hive with frames spaced 1½ inches. Would this hive not hold 12 frames?

Another time I remember reading that in time queens would, after selective breeding, be capable of laying more eggs than they do now, and the Modified Dadant hive would be too small. Also what K. Hawkins has to say on page 347 of July, 1923, A. B. J., further convinces me that the 11 frames are not enough.

Now I have standard equipment and want to change to deep frames, but I want to have it large enough so that after a few years I will not find it too small and go through the troublesome work of changing again.

1. Which do you think would be best, 12 or 13 deep frames?

2. My honey, which I extracted in mid-summer has already granulated some in Mason jars three weeks ago. I did not expect it to do this till quite cold weather. Does it usually do this in September? (It is clover honey).

WISCONSIN.

Answers.—1. The adoption of the 11-frame hive of Quinby depth and Langstroth length, was made by us after much experimenting. If you will read pages 9, 10 and following pages, of the "Dadant System," you will readily see that we did not adopt that size until after thorough trials up to 20 frames in the brood chamber. So we think even 12 frames is too great a number when of the large size. As to your statement that queens will become more and more prolific, that is true; but there is a limit. The improvement in anything, in the physiology of living beings is very slow and it is my opinion that if it becomes necessary to have still larger hives, it will be only after years of cultivation. It is just like the improvement of the length of the tongue. Some of the queen breeders claimed to have what they called "red-clover queens," but it turned out to be so temporary as to do more damage than good to the man who made the claim. So I do not believe you will need fear that your queens will get so prolific that you may need to change again. The objection we

have to hives that are too large in the brood chamber is that the bees put so much honey in them that we are compelled to extract, and it is inconvenient to extract from the brood chamber.

2. Clover honey granulates quite readily in September even before cool weather.

CONDITIONS FOR WINTERING

1. What is the minimum number of Hoffman frames, well covered with bees, that would constitute a strong colony for wintering?

2. "How to Succeed," advises wintering each colony in two hive bodies, with at least ten Hoffman frames two-thirds full of sealed honey. How shall these frames be distributed? If placed in the usual way, one hive body would be empty, which, I fancy, would do no good. In the case of my four colonies the frames in the lower bodies are pretty well filled with brood and honey, and in the upper bodies there are from four to eight frames full of honey, some capped, some partly capped. How shall I arrange the frames for winter? And would I dare to take any of the honey from the bees this autumn.

3. Again, if some of the combs are stored above, is there any danger of the bees not getting it in the spring? I am told that when in cluster they don't like to go above the top bars of the lower frames. Would it help matters to give a wider spacing between the frames, putting, for instance, nine frames instead of ten to a hive body?

PENNSYLVANIA.

1. A strong colony, in winter, might be wintered on 8 frames, Langstroth size (The word Hoffman does not refer to size but to the self-spacing features.) In order to winter upon that number the bees should have an ample amount of honey in those 8 frames. They would need more room and probably more honey in spring.

2. I do not advise wintering in two hive bodies, as it gives too much space for cold air. However, for the average beekeeper who often neglects to inspect his colonies in spring, the advice to use two bodies is fairly good. In your case, I would advise removing the upper stories and give them back in spring, when the colonies begin to gain strength. You could use the honey from the upper story this fall, provided you see to it that they have plenty of food in spring.

3. A wider spacing than the 1½ inch is what we advise, but we advise it for the whole season, so that the combs of honey are made thicker by the bees, since they reduce the passage to the absolutely indispensable space. This insures more honey over the cluster. Spacing them late may do. Mr. Cowan advised it in his book, but we prefer spacing regularly to 1½ inch for the entire season. No one has ever overthrown our arguments in favor of it. Our experience sustains it.

FOOLISH QUESTIONS

1. From the date the queen deposits a fertilized egg in the worker cell, about how long would it be till the bees seal that cell?

2. A beekeeper that leaves on a super of empty sections on each hive for the bees to draw out the combs during the winter months, would you call him an efficient beekeeper?

3. Is it good management to give the bees two brood chambers during the winter months with the one underneath full of combs and honey and the one on top full of frames containing sheets of foundation, with an entrance to each brood chamber?

Answers.—1. Nine days.

2. No, certainly not.

3. No, and we would advise your beekeeper to buy a textbook and read it, so that he will not ask such questions in the future. The Question Department is intended to reply to questions which you cannot find in a textbook.

LET THE BOYS SELL YOUR HONEY

By E. A. Meineke.

Beekeepers everywhere are spending more time than heretofore on marketing problems and looking for new outlets for honey. For those located in or near towns and cities the following plan should dispose of considerable honey at a fair profit to the producer:

Honey placed on a grocer's shelf usually moves slowly because he has so many articles that he cannot spend much time in bringing honey to his customers' attention. Good solicitors for house-to-house canvassing are usually difficult to get. Enthusiastic boys are hard to beat as honey salesmen, when they are working for some article that they want very much.

All boys in the northern states like to skate and it is the ambition of every boy to own a pair of racers with shoes attached. Because these skates are quite expensive, many boys cannot have them unless they earn the money themselves.

I made arrangements with the manufacturers of the best grade of ice skates to get skates at wholesale prices. An advertisement was then put in the local newspaper to let the boys know that they could get a pair of "Johnson Racers" (these skates have been advertised a great deal in Chicago) for selling 25 quarts of Meineke's honey. Most of the boys sold the honey in a very short time. One boy sold and delivered his 25 quarts in two afternoons after school hours. These boys sold honey to many of their friends that it would have been impossible to sell honey to in any other way. When the honey was sold, the boy was given a letter to the skate factory so he could try the skates on and get the shoes to fit.

In the spring months a similar plan was tried with roller skates. This time two dozen pair of skates were purchased at a time and kept in stock, as the roller skates were adjustable to any size shoe. The skate manufacturer supplied me with 5,000 leaflets describing his skates. On the back of these leaflets I had my proposition printed. The roller skates were much cheaper, so it was necessary to sell only six quarts of honey to get a pair of roller skates. The leaflets were distributed to the boys and girls as they came out of school.

Several of the boys were able to get two or three pair of skates. One ambitious boy supplied his two younger brothers and a sister with skates.

The boys were better at advertising than the newspaper or the leaflets I gave out at the school. When a boy saw his pal skating around on a new pair of skates he wanted to try the same thing. In order to encourage the boys to bring their friends to sell honey, I gave a baseball glove to the boy that brought the largest number of his friends.

Only those boys that sold enough honey to get a pair of skates counted in this contest. The winner had five boys to his credit.

When these boys finished, everyone in the neighborhood knew about Meineke's honey. There are many articles that boys want that could be used in a similar campaign.

The boys took the orders, delivered the honey, and collected the money. Although there were very few of the boys that I knew personally, they all proved to be honest and turned in all the money. Both of these plans disposed of honey at a profit at times when honey was not selling very fast.

Chicago.

JOIN THE LEAGUE

Do you consider the American Honey Producers' League reliable, strictly honest and a decided benefit to a beekeeper? If so, what way? I was thinking of joining them, but thought I would write you first. Your honest convictions will be much appreciated. Idaho.

The American Honey Producers' League is just what beekeepers have made it. It is strictly honest, of course, as long as it is in the hands of men like the present managers, for an association is what its managers are. It should be of decided benefit to beekeepers. In fact, if beekeepers only understood their interests in organizing, like the orange growers of California, they would make as strong an organization as that of the Orange Growers, which I think embraces all the citrus fruit producers of California. We need to be organized, like the bees, so as to decide what prices to ask for our product, through leaders that can get the information. But thus far, we have only been partly organized, just like the farmers, and that is why, like the farmers, we have to sell our produce at what the organized dealers are willing to give us. When we see plainly the need of organizations, we will not hesitate to join the League and make it strong and useful. But as long as we think that every dollar we pay into this league must come back within 6 months with 300 or 400 per cent of interest, we will have only what we have now, a partly successful League.

The League asks only a dollar for membership. If it were to ask \$50 per year and get it, from all active honey producers, it would probably become as efficient as the Citrus Growers Association, which, I am told, sells oranges in Florida, while the unorganized Florida orange growers see their oranges rot under the trees.

At present the League has a "Price Committee" whose duty is to get informed on honey production and demand, and suggest uniform prices.

The League has also a "trade mark" for its members. It advertises a premium to anyone who will cause the punishment of thieves or depredators who damage apiaries of members. It also publishes a "Treatise on the Law Pertaining to the

Honeybee." It is active in securing lowered freight and express rates. It will do ten times more for us, if it is unanimously sustained by beekeepers. Will our beekeepers understand this? I have been, for 40 years, trying to help along an organization of this kind, but nothing can be successful as long as beekeepers want to see the dollar which they pay in come back with five others inside of a few months.

EUROPEAN FOULBROOD IN CHILE

The following letter is from the same man who wrote the letter published in September, 1923, and who was treating his bees for European foulbrood:

May 24.

Dear Mr. Dadant:

We are at rest again between a good crop and the next, which will be still better, we hope. (May is the November of the Southern Hemisphere). European foulbrood has been frightened away and shows but rarely and only in queenless, drone-laying colonies. The many empty hives we had are about all filled again and begin to give us the hint that more will be needed for next season. However, I do not wish to be too hopeful after having had my apiaries reduced to a fourth of strength.

The plentiful honey crop helped us wonderfully and I have also acquired a great deal of experience with the use of "Eau de Javel" (Soda Chlorinated Solution). I am astonished that there are not more descriptions of cures in your magazines, with this remedy. It may be had anywhere, except in this part of the world. I had to prepare it myself and made many experiments. If I find 10 diseased colonies, I treat them, and when I visit them again, 7 or 8 are cured. Then I begin over and the number keeps decreasing. When I find only a queenless one, in an apiary, having the disease, I destroy it.

Here is my method: I use the formula given by A. C. Miller in February, 1922.

I take liquid honey to which I add some water, perhaps ten per cent; then I put in my preparation until I notice by its color that there is enough. Then I make some trials on the bees, by feeding it to them in a small quantity on the top of the frames. If they lick it up like ordinary syrup, it is too weak; if after tasting it they back away, it is too strong; but if they take a taste, back out and come back and taste again, wiping their tongues with their claws, it is about right.

I aim to remove the dead larvæ, then pour syrup on the face of the comb, especially near the top. I don't shake the bees off, when I want to look at the brood, but just blow on any part I want to see, to drive the bees away. There is no danger of robbing in doing all this.

I lately heard that wax-moths are

doing damage in South Chile. There are none here yet. When will it be the turn of American foulbrood?

Accept my best wishes.

G. Javet, Chile.

(Soda Chlorinated Solution may be had at any drug store. It is commonly used to disinfect closet stools, laundry and pantry pipes, removing fruit stains, ink, etc., from linen, and many other cleansing purposes.—Editor.)

HORSES KILLED BY BEES

It is well known that bees never volunteer to attack anyone without previous provocation. The following letter will indicate that this may happen. However, we believe that the last few words of the letter explain the trouble. The bees had been "robbed," probably without sufficient precautions. There had perhaps been a little robbing by colonies and the guards of the entrance of the hives were on the alert and looking for trouble. But this event is certainly evidence that bees can tell one another of troubles as well as of harvests.

We should never place an apiary fronting a field in which horses have to be worked, without using some great precautions such as smoking the hives just before the horses are brought there. Let this mishap be a warning to those who keep bees in exposed places.

"I was plowing corn across the fence from the bees. The bees were about 15 feet from where I was working at the time. When I got to this place there were 5 or 6 bees to start with and in a few seconds' time they were there by the hundred. I tried to drive the horses away, but could not do much with them. I got them about 75 feet from the bees. The bees got after me so bad I could do nothing, and I left the team stand and ran for a shed to get away from them and the team turned around and ran back to the fence where the bees were. I came back and unhitched them from the plow. The bees made mostly for their heads. They were so thick on the horses' heads you could not see the hair. The horses were good, stout, healthy animals. One of them gave up after about 15 minutes and did not try to fight the bees at all. She died in less than an hour. The other horse went crazy. I could not handle her at all. She got a half mile before she died. She died in about an hour and a quarter. The horses were stung by the thousand. I don't know how many times I was stung, but I think about 200.

"I got sick in about an hour and was bad for three or four hours. I did not swell; the poison all came out through my stomach. I had to vomit till I thought I could not stand it. The bees had been robbed about a week before. It was not a swarm. There were 28 hives at this place.

"No one knows what made them so mad that morning. This happened

about 9:30 o'clock. I passed there many times before and never was bothered."

IN SOUTHEASTERN MINNESOTA

By C. J. Pickert.

The impression is general in southeastern Minnesota that commercial honey production upon the prairies is impracticable, and few large apiaries are found outside the gorges of the Mississippi and its tributaries. Some farmers "keep a few bees," buy standard hives, put them into the cellar in the winter and set them out in the spring. The hives fill with drone comb until the colonies become exhausted; another vagrant swarm is captured, and then the whole figure repeated. But here and there a real beekeeper gets fairly good returns. Alsike is plentiful, and seldom fails to yield. Alfalfa is gaining favor, and sweet clover and other legumes are increasing.

Three years ago the Winona County Fair, at St. Charles, added a Division of Apiculture. The first exhibit was very light, but this year it excited the admiration of thousands of visitors. Bee supplies and bee literature were exhibited and sold, and honey was sold from the first day. The exhibit of honey cookery was surrounded by women copying the recipes. Beemen hovered about the exhibit and became acquainted, and there will be less misunderstanding about prices, and a more uniform grading. The exhibits of these three years have perceptibly increased the consumption of honey. Minnesota will yet be known as "the Bread and Butter State, With Honey on."

St. Charles, Minn.

SUCCESS WITH ROOMY HIVES

By L. H. Cobb.

Last year I had wintered over two colonies that were very strong, one in a Dadant hive and the other in a ten-frame hive. They started off briskly in the spring and I gave the ten-frame hive another ten-frame body, as I did not want to run any chance of their swarming from lack of room. While I looked into each often to make sure, a queen cell was never built and the queens were both old ones. The Dadant colony had not swarmed the year before, but the other filled the hive so quickly the queen had every frame with brood in it and then swarmed before I realized it, as I did not examine them. I had bought two two-frame nuclei from Texas the year before, coming in fruit bloom time, with one pound extra of bees in each, intending to test the Dadant and ordinary ten-frame hives for non-swarming. I left them alone, but I did not take into account their strength and was too slow about providing the second story to my ten-frame. I am satisfied that the Dadant will be practically as free from swarming as the double-story ten-frame and be a saving in the surplus room provided, that will not be needed with colonies of ordinary

strength. Both the colonies were so strong before fruit bloom that the queen filled the first Dadant super with brood also, and the ten-frame went into the third body. My experience last year was with the same colonies and queens wintered over without protection of any kind. By June both colonies had brood in the upper part again. I shall not let the Dadant go above this summer, but put a queen excluder over it, then try it with the double-story ten-frame. I think that my tests have shown me that there is no doubt that the Dadant is the best farm hive where colonies do not get so excessively strong, and with full-width entrance will swarm very little even if a queen excluder is used to keep the queen from putting brood into frames we want to use for cutting out the comb.

Girl Dies When Stung by Insect

"Twenty minutes after having been stung by an insect, thought to have been a bee, Mildred Weber, 14-year-old daughter of Mr. and Mrs. G. W. Weber, of South Ninth street, died yesterday afternoon about 4 o'clock. Mildred, accompanied by her mother, brother and two school girl friends, Esther Sporleder and Bertha Redfield, was returning by automobile from College Place, when about two miles from Walla Walla Mildred said that a bee had stung her on the neck. The other two girls in the rear seat removed the stinger, which was about a sixteenth of an inch long and which did not resemble a bee's stinger. Immediately after the stinger had been removed Mildred started sneezing violently.

"Mrs. Weber, being aware of the fact that a bee sting made her daughter deathly ill, made all haste to get her to a physician here. The girl was taken to the office of Dr. R. C. Mayo and Dr. E. J. Rhoades was also called, but the poison had affected the heart and death came shortly afterwards. The entire body of the girl was discolored as a result of the poison. Physicians declared the case a most baffling one, especially in view of the fact that death came in such a short time after the injection of the poison. Poison from the fangs of a rattlesnake will not kill in such a short time."—Walla Walla Daily Bulletin, May 23, 1924.

Mr. G. W. Weber, the father of this unfortunate young lady is a beekeeper, secretary of the Walla Walla County Beekeepers' Association, and representing bees on the Farm Bureau Board.

Associated with the fact that bee stings made the young lady deathly ill, there was probably some pathological condition in connection with the accident. We are often reminded that bee stings furnish a poison more deadly than that of the rattlesnake, but much less in quantity. The striking of an artery or a sensitive nerve may have caused the extreme condition. It is also probable that the insect was a hornet and not a honeybee.

BEEKEEPERS WE MANUFACTURE DOVETAILED HIVES, HOFFMAN FRAMES, SECTIONS AND SHIPPING CASES

Our hives are made of best grade White Pine, cut accurate and smooth to standard measure. Sections are made of Basswood, polished on both sides. There are no better made.

We carry a complete line of everything in the apiary. Our shipping facilities are as good as can be found anywhere. We want your business. We guarantee prompt and satisfactory service. Price list free.

MARSHFIELD MANUFACTURING COMPANY, Marshfield, Wis.

TENNESSEE-BRED QUEENS

**Fifty-two Years' Experience in Queen-Rearing
Breed Three-Band Italians Only**

	Nov. 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12
Untested.....	\$2 00	\$ 8 50	\$15 00	\$1 50	\$ 7 50	\$13 50	\$1 25	\$ 6 50	\$11 50
Select Untested.....	2 25	9 50	18 00	1 75	9 00	15 00	2 50	7 50	13 50
Tested.....	3 00	16 50	30 00	2 50	12 00	22 00	2 00	10 50	18 50
Select Tested.....	3 50	19 50	35 00	3 00	16 50	30 00	2 75	15 00	21 00

Select tested, for breeding, \$7.50.

The very best queen, tested for breeding, \$15.

Capacity of yard, 6,000. I sell no bees by the pound or nuclei, except with high-priced tested and breeding queens.

Queens for export will be carefully packed in long-distance cages, but safe delivery is not guaranteed.

JOHN M. DAVIS, Spring Hill, Tenn.

HONEY

We Buy—We Sell

We want honey all the time to supply our customers everywhere. You will find it profitable to keep us informed as to what you have and send us samples.

ALSO—If you need honey to supply your own trade, let us quote you. We also handle Airco Foundation, honey containers and bee supplies. Foster your business.

—BEES FOR SALE—

**THE FOSTER HONEY & MERC. CO.
BOULDER, COLORADO**

**DO
YOU GET
OUR
BEEKEEPER'S
BULLETIN**

POSSIBLE HAPPENINGS WITH TWO QUEENS IN ONE HIVE

We are in receipt from M. Barthelémy, one of the leading apiarists of Marseille, France, of a short letter concerning the possibilities resulting from two queens in a hive at the same time. As this tallies with our experience, we publish it:

"On the 4th of May of the current year, we exhibited, at a meeting of the Beekeepers' Association of Bouches-du-Rhone, the oddity of two queens, mother and daughter, laying eggs in a hive, at the same time. A few days previously, I had seen them both laying, on the same comb. This happened again while they were being exhibited at the meeting, and they were at a very short distance from each other.

"We have often noticed that, when the queen does not fully fill her functions, the bees rear one or more young queens, without necessarily intending to swarm; the young queen, as soon as she emerges from her cell, does her best to destroy her rivals in other queen cells. Some 3 days after her emergence, she mates, and within the two days following, she begins to lay; the old queen meanwhile perhaps slowly continuing her insufficient laying.

"Let us now suggest the hypotheses that may exist in such a case: Had we not noticed the existence of two queens, we might have deprived the colony of this old queen and then would have wondered why the bees did not rear queen cells. Had we removed the young queen, instead of the old one, the conditions would have been similar, but the colony would have become weakened because of the lack of prolificness of the queen.

"Let us suppose that the old queen was pure and purely fertilized and the young queen ill-mated. There would be hybrid bees in a hive the queen of which we knew to be pure. The removal of this pure queen would still leave the matter in confusion.

"Supposing that the young queen was removed by the apiarist and that the colony was left without examination for two weeks, one might then suppose that the bees had reared another and that she was already laying, earlier than normally.

"If we try to introduce a queen, in a case of this kind, and destroy only one of the queens, knowing nothing about the existence of the other, the new queen may be killed and the purchaser of this queen may not find out that she was killed and may accuse the dealer of having sold him an old, unfertile queen; or, if the young queen is the one that has remained and she is ill-mated, the purchaser of the new queen may accuse the breeder of having furnished him with a mismated queen instead of a tested one. This shows how many errors may be caused by this fact of two queens in one hive."

THRIFTY BEES

will help you increase your 1925 profits. Since 1892 they have been pleasing America's best beekeepers.

Ask for further information and prices.

W. J. Forehand & Sons

Fort Deposit, Alabama.

TEMPER AND HABITS OF BEES

By the Rev. A. A. Evans.

Is ill-temper a sign of virility in bees? I have a strain whose temper I can only describe as ferocious. I am ashamed of their manners when I take visitors into my garden. I may only point at them from a distance, for they show no respect even for my dearest friends, but treat all with equal hostility; and yet I forgive them everything, for they are wonderful honey-getters. Last year I took 130 pounds of delicious honey from this stock, leaving them amply provided with stores for the winter. This year they are again my most successful workers and I show my friends—from a distance—the tiered-up racks of honey waiting to be extracted. This bulges so high that the hive top is pushed above the lift. I sold two swarms of this cross-grained lot last year, and I hope to hear soon whether they have kept up their reputation for stings and honey.

On the other hand, I have had bees so gentle and amiable in disposition that a child might safely play with them in the hive interior, but it has to be added, so lazy, so utterly slack, that they would scarcely gather enough to keep themselves alive. Now I wonder how far fierce energy and fierce temper are connected. It is not my experience among mankind that bad-tempered people are good workers. Indeed, though I may be mistaken, it has seemed just otherwise. The choleric man dissipates some of his vitality in splenetic outburst. Mere rage means loss of power, while the quiet worker conserves his strength and expends it in steady industry. But perhaps the temper of the one is born of keen physical vigor, while the other, the human kind, is mere nervous irritability.

(Our experience does not tally with yours. Although we have seen some good workers that were cross, we have oftener seen ill-tempered bees waste their time in flying about the apiary, seeking for a chance to rob; while gentle workers would fly right out of the hive even when it was open, to the field, without paying attention to the operator.—Editor.)

Buffalo Radio Program

On Monday night, December 1, the radio program from WGR, Buffalo, N. Y., from 9 to 11 p. m., will be broadcasted, under the auspices of the Western New York Honey Producers' Association. The program will include at least two talks on bees and honey. An excellent musical and vocal program is being arranged by that association's energetic secretary, Mr. Wilburt C. Wahl of Williamsville, N. Y. Let's all help to make this program a huge success by seeing to it that there is a large

audience in every community of the state to listen in. You will be proud of what beekeepers can do.

Report From Lincolnshire, England

We have had a very wet, cold summer, but, in spite of that, have had over 90 pounds per hive, spring count, and about 80 per cent increase. I have this year tried some of your standard hives and like them much better than the English hive.

L. C. Turnhill.



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Oldest, Largest and Best
3 MONTHS FREE

All ONE, TWO or FIVE year subscriptions received before Dec. 31st will be entered to commence with the January issue, and the Oct., Nov. and Dec. issues of this year will be mailed FREE. Order today and get them.

1 Year 75c. 2 YEARS \$1 5 Years \$2.00
Averages over 100 pages per issue. Tells how to feed, house and breed; how to secure high egg production; how to hatch and rear poultry successfully. A month's trial subscription 25c. American Poultry Journal, 21-523 Plymouth Ct., Chicago.

WESTERN BEEKEEPERS!

We handle the finest line of bee supplies. Send for our 1924 price list. Our quotations will interest you.

The Colorado Honey Producers' Association, 1424 Market St.,
Denver, Colo.

Ontario Meeting

On December 2, 3 and 4, 1924, the Ontario Beekeepers' Association will hold the thirty-fourth annual convention in the Prince George hotel, Toronto.. All beekeepers, whether members of the association or not, are urged to be present. A fine program is ready with good men on it—Pettit, Crane, Sibbald, Byer, Latham, Wier, Halstead and others. Program will be mailed on receipt of card to F. Eric Millen, Secretary, O. A. C., Guelph, Ontario.

August Swarming

I see in the September Journal that someone wanted to know why his bees swarmed in August. That is not bad, as I had six swarms in September, the last one on September 16. This one is only ten days old and has 9 frames of honey, six of them capped.

H. Hefferman, Ohio.

Change of Date for Quebec Convention

The Quebec Provincial Beekeepers' Convention will take place November 26-27, instead of November 12-13, as formerly announced.

PACKAGE BEES AND QUEENS

Most northern breeder in California. One select untested, \$1.00; 6, \$5.00; 12 or more, 75c each.

J. E. WING, Chico, Calif.

HIGH GRADE ITALIAN QUEENS

Write for Literature.

JAY SMITH,

Route 3, Vincennes, Indiana.

"TOLEDO"

GRIGGS will handle your COMB & EXTRACTED HONEY. Send samples and prices expected to either Toledo or Maumee, Ohio.

S. J. GRIGGS

Toledo-Maumee, Ohio

Sole agent Lewis Beeware and Dandant's Foundation.

Special prices for Fall orders.

MONEY AND SATISFACTION FOR YOU

Save one profit by buying direct from factory. Standard, Jumbo and Modified Dadant Hives; cedar or pine. Write for catalog.

A. E. BURDICK CO.,
Sunnyside, Wash.

WHAT ARE YOU PAYING?

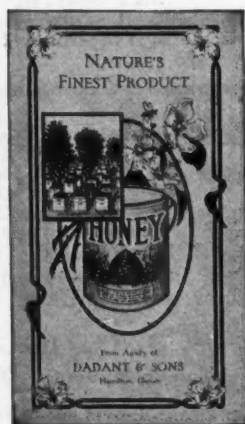
If you have not received our price list covering a full and complete line of honey containers, it will pay you to secure it at once.

Here at Council Bluffs we are carrying large stocks of friction top containers, 60-lb. cans, cased and in bulk, wooden and pasteboard comb-honey cases, glass jars in 3 sizes.

10% DISCOUNT FOR CASH DEDUCTABLE FROM LOW PRICES.

Write today, in order to secure guaranteed containers and cans at best possible prices.

THE A. I. ROOT COMPANY OF IOWA, Council Bluffs, Iowa



A four-page honey leaflet of beautiful design at a remarkably low price.

WHEN your honey is harvested you will need to enlist the services of our clever little honey salesmen to help with your marketing. We have a whole force of them—

HONEY LABELS—A variety of forceful designs from which to choose.

HONEY LEAFLET—A four-page story about honey.

"FACTS ABOUT HONEY"—A

sixteen-page booklet, tells the story more in detail.

PRINTED STATIONERY—A useful salesman that is often overlooked.

ALSO window signs, posters, etc.

SEND FOR FREE SAMPLES

AMERICAN BEE JOURNAL
HAMILTON, ILLINOIS.

Crop and Market Report

Compiled by M. G. Dadant

It is interesting to read over the report of United State Department of Agriculture giving condition of honey bees and honey plants and yields of honey, as of date of September 1, 1924. The condition of colonies of bees the country over is considerably better than 1923, and seven-tenths of one per cent better than the five-year average.

Condition of honey plants is also better than last year and better than the five-year average, so the prospects all in all should look most glowing for the 1925 crop.

As to the honey crop for the year 1924, there are only a few states which show less production than a year ago. These are as follows: New England states, New York, New Jersey, Pennsylvania, Virginia, South Carolina, Michigan, Wisconsin, Montana, New Mexico, Utah and Nevada.

All the balance of the states show either as good per colony production or more than 1923. Even California, which reports such a short crop this year, is reported in the U. S. statistics as having 38 pounds per colony average, compared to 37 pounds in 1923.

For our questionnaire to reporters we asked the following questions:

1. How is honey selling?
2. At what prices are sales being made?
3. In what condition will bees go into winter quarters?
4. Do you anticipate any difficulty in disposing of this year's crop?

HOW IS HONEY SELLING?

Except in a very few instances reports come in that honey is selling excellently. In one or two places there has been a slight slump, owing to the moving of fall fruit, but generally the demand for honey is excellent, and is moving both in a local way and jobbing lots.

HONEY PRICES

Honey prices are ruling much better than last year. Perhaps this statement should be qualified by saying that the average honey prices are better than a year ago. There is not nearly so much price-cutting as there was in 1923, although there are still some reports of honey being sold as low retail as 85c for 5-pound cans, and \$1.25 to \$1.50 for 10 pounds.

The schedule of prices as given in September Crop and Market report are being adhered to fairly well. One or two reports coming in from western slope Colorado and Utah are to the effect that carloads are selling as low as 8 to 8½c for best white extracted honey, whereas the general market is ruling 9 to 10c.

We have also reports from South Dakota giving quotations on No. 1 comb honey at \$3.60 per case, which is very much below the market, as the inter-mountain territory is quoting in carloads at \$4.75 to \$5.00 for No. 1 comb honey and slightly less for lower grades.

CONDITION OF BEES

The reports of individual reporters agree practically exactly with that of the U. S. Department report in this

respect. With very few exceptions bees are going into winter quarters strong in numbers and with a good quantity of honey to carry them through.

Feeding has had to be resorted to in some sections, those reporting it most frequently being in New York, Wisconsin and California.

DISPOSITION OF CROP

Our records do not show a single instance where the reporter was fearful that he would not be able to get rid of his entire crop before the 1925 crop began to be harvested. Most of the reporters were wondering where they would get enough honey to supply their demands, many of them being already sold out. This being the case, it does not seem probable that a very large volume of honey will be carried into the 1925 crop year. Regardless of this fact, the beekeeper who has a home trade to supply should by all means buy enough honey to keep his trade supplied so as not to drive his customers to some other sweet. We believe that this is one of the greatest stumbling blocks in the supplying of local markets and that is that they are not generally supplied throughout the year, but the customers are "left to go begging" when the local supply of honey is exhausted.

One or two suggestions have been made that the price of comb honey would drop off considerably as the fall progressed, owing to the fact that there would be a lot of granulation on honey that was held a very long time. It is not the writer's opinion, however, that there is sufficient comb honey in the west to bring about this condition but that the entire crop should be disposed of before any serious granulation sets in. In fact, last year, many localities went begging for comb honey because there was none shipped in to them, and none raised in that section.

SUMMARY

All in all, prospects look entirely favorable for the beekeeping industry, throughout the country. Texas did not have as large a crop as anticipated, but honey is moving freely and bees are in good condition, so there does not seem to be probable the repetition in 1925 of the disastrous seasons previous to 1924. Conditions in California are still not alluring, although the beekeepers generally seem to be taking better care of their bees and expecting something better for 1925. The weather, however, has not been the most favorable for getting bees into good condition for winter. Much feeding, however, is being resorted to there.

The beeswax situation is also much improved over what it was a year ago. Foreign wax, chiefly African, has lately been seeking European markets, with the result that it is now quoted on a parity with domestic wax and is not generally competing with it. It should in time strengthen the beeswax market, or rather, has already strengthened it.

In other words, it would seem that there is gradually a tendency for conditions in the honey and beeswax line to resume normalcy again. Whether a large crop of honey, another year comparatively, would disturb this condition remains to be seen.

CLASSIFIED DEPARTMENT

Advertisements in this department will be inserted for 5 cents per word, with no discounts. No classified advertisements accepted for less than 35 cents. Count each initial or number as one word.

Copy for this department must reach us not later than the 15th of each month preceding date of issue. If intended for classified department it should be so stated when advertisement is sent.

As a measure of protection to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

BEES AND QUEENS

HONEY IN PAILS—

Atwater, Meridian, Idaho.

BEFORE ordering, get our prices on package bees for 1925 delivery.

W. C. Smith & Co., Calhoun, Ala.

BIG, strong colonies in dovetailed hives, \$5. The Foster Honey & Merc. Co., Boulder, Colo.

FAMOUS FLORIDA TUPELO BELT LOCATION—75 colonies of bees, good honey house and equipment. Have averaged 120 pounds surplus past five years. Forty acres truck and citrus land, small grove and nursery stock. Cleared land fenced with woven wire. Ample buildings, excellent well water, healthful location. Also 50 hogs, horse, wagon, tools, cow, yearling, chickens. Cypress and gum timber. Navigable creek at honey house. Free range and pasture for cattle and hogs. Owner getting too old to manage the business. Price, \$2,000 cash. Write J. L. Morgan, Tupelo Apiaries, Apalachicola, Fla.

MY BRIGHT THREE BANDS, in packages, nuclei and queens for 1925, April and May delivery. My special two pounds of bees in frame emerging brood and honey, with queens introduced, are the safest and best money maker on the market. Write for prices. Satisfaction and safe arrival guaranteed. J. L. Morgan, Tupelo Apiaries, Apalachicola, Fla.

FOR SALE—325 colonies of bees in four yards, including locations, honey-houses and cellars, in resort section of northern Michigan. Fine raspberry-milkweed honey and no failures. Modern home in county seat, if wanted. Particulars on request. P. W. Sowinski, Bellaire, Mich.

FOR SALE—50 colonies of bees in 8-frame Langstroth hives. Will sell cheap on account of my eyesight. H. B. Stumpe, Baileyville, Ill.

FOR SALE—Sixty colonies in 2-story, 10-frame, painted hives. Combs from wired foundation. Six-inch bases. Owner has more than he can care for. Harry Laidlaw, El Paso, Texas.

BEFORE buying your package bees on comb for 1925, kindly write us. We can save you money on 10 or more package lots. We are prepared to ship bees on a large scale and have the light three-banded stock only. We begin shipping April 20th. Remember, we guarantee our stock to be free from disease. All shipments go out with Government health certificate. Central Louisiana Apiaries, Hamburg, La.

FOR SALE—White clover honey in new 60-lb. cans, at 11c. Sample 20c. Hoeft & Honigford, Ottoville, Ohio.

I AM BOOKING orders for May delivery, from my best Caucasian or Italian race, 3-frame nuclei and queens. Apiary inspected. Peter Schaffhauser, Havelock, N. Car.

QUEEN BEES in season, \$1.00 each. Graydon Bros., Rt. 4, Greenville, Ala.

BRIGHT Italian Queens for 1925. J. F. Diemer, Liberty, Mo.

FOR SALE—58 colonies; 33 in Modified Dadant and 25 in 10-frame standard hives. Equipped with comb and extracting supers. Extractor, tank, cappings melter, etc. A good outfit to be sold at a bargain. No disease. Write for particulars. L. C. Worth, Lilbourn, Mo.

IF you want two-frame nucleus for 1925, let me book your order now. Write for prices.

E. F. Day, Honoraville, Ala.

TESTED QUEENS—\$1.00 each, for the fall and winter months. Delivery guaranteed. Queens are mailed from my yards every month of the year.

D. W. Howell, Shellman, Ga.

ST. ROMAIN'S Quality Bees—I am offering for sale, three-banded Italian bees and queens at a very low price. I am booking orders now with 10 per cent with orders, balance twenty days before shipment. Spring delivery to be made April 15th to 20th, 1925, depending on weather condition. I also guarantee safe arrival and will pay transportation on any size order, from one package to a carload. Health certificate with each shipment. For prices and circulars write to John St. Romain, Marksville, Louisiana.

THREE-BAND Italian bees and queens. One selected tested queen, \$1.50; one selected untested queen, \$1.00; six or more, a liberal discount.

J. Allen, Catherine, Ala.

PURE ITALIAN QUEENS by return mail. Reared in natural honey flow, and strictly for business. The best are the cheapest. Let me prove it. July, August and September prices: 1, \$1.00; 6, \$5.00; 12 or more, 75c each. Most northern breeder in California.

J. E. Wing Chico, Calif.

WE are now booking orders for our high-grade queens for spring delivery. Prices: Untested, \$1.00 each, 25 to 75, 85c each, 100 70c each. Tested, \$2.25 each, 25 or more \$2.00 each. Select tested, \$2.65 each, 25 or more \$2.25 each. One-fourth down. Write for circular.

E. E. Salge & Bros., Weslaco, Texas.

CARNIOLAN QUEENS—Bred from imported mothers of pure Alpine stock. Lockhart's best select breeding strain is their support. No better combination could be arranged. Prices, 1 select untested, \$1.00; 6, 90c each; 12, 80c each, and 25 or more, 75c each. Circular free. M. G. Ward, Lathrop, Calif.

BIG, bright Italian queens, 75c each, by return mail. P. B. Skinner, Greenville, Ala.

SEE my display ad, page 535. Jes Dalton, Bordelonville, La.

FOR SALE—Italian bees and queens. One-pound package with untested queen, \$2.50; 2-lb. package with untested queen, \$3.50. Queens, untested, up to May 15, \$1.00 each.

O. F. Hendrix & Son, West Point, Miss.

Want Ads Pay Big Returns

Invest a small amount in these ads and they will help sell your goods at a profit.

GOLDEN THREE-BANDED and Carniolan queens. Tested, \$1.00; untested, 75c each. Bees in 1-pound package, \$1.50; 2 pounds, \$2.50; 3 pounds, \$3.25. Safe delivery guaranteed. C. B. Bankston, Box 65, Buffalo, Leon Co., Texas.

BREEDER of fine Italian queens. C. B. Saunders' Apiaries, Merom, Ind.

MERRILL'S QUEENS—\$1.00 each. R. E. Merrill, Muncy, Pa.

HARDY ITALIAN QUEENS—\$1.00 each. W. G. Lauver, Middletown, Pa.

GOLDEN and three-band queens reared in separate yards; booking orders for 1924. Untested, one, \$1.25; doz., \$11.50. Safe arrival guaranteed in U. S. and Canada. Tillery Bros., R. 5, Greenville, Ala.

FOR SALE

HONEY IN PAILS—Atwater, Meridian, Idaho.

FOR SALE—45 gallons Hutzleman's Solution. Reduced price. Clyde Fisher, Joliet, Mont.

FOR SALE—8 acres of land situated 40 rods from city limits; has 5-room house, new bee house with bee cellar, big chicken house with scratching house, new brooding house, big barn, wagon shed, tool shed, 25 colonies of bees in best condition, with all equipment necessary; 20 apple trees, 24 plum trees, one-half acre of strawberries; also other berries; 300 Wyandotte chickens. Will sell all or part. Write for particulars. Frank Jara, Albert Lea, Minn.

FOR SALE—Good second-hand 60-lb. cans, 2 cans to a case, boxed, at 60c per case, f. o. b. Cincinnati. Terms cash. C. H. W. Weber & Co., 2163 Central Ave., Cincinnati, Ohio.

FOR SALE—White and amber extracted honey. Write for prices. State quantity wanted. Dadant & Sons, Hamilton, Illinois.

FOR SALE—120 acres irrigated unimproved land in Wyoming, \$30 per acre. Will grow 500 tons alfalfa per year. Easy terms. Would accept some bees in 10-frames or larger equipment on this. Asher F. Dillard, Walthill, Neb.

HONEY AND BEESWAX

HONEY IN PAILS—Atwater, Meridian, Idaho.

WE are paying 8½c net cash, your station, for white honey, carlots. The Foster Honey & Merc. Co., Boulder, Colo.

FOR SALE—Excellent honey in 5 and 10-pound pails. Write for prices. E. Dowty, Falls City, Neb.

GOOD comb honey for sale in quantity. Prices on request. Frank Coyle, Penfield, Ill.

CHOICE white clover honey in 5 and 10-pound pails and 60-pound cans. Prices on request. Sample 15 cents. Sundberg Bros., Rt. 3, Fergus Falls, Minn.

FOR SALE—No. 1 white comb honey, \$5.50 per case, 24 sections to case, six cases to carrier. Dark extracted (about half clover), 10c per pound, two 60-pound cans to case. H. G. Quirin, Bellevue, Ohio.

FOR SALE—Clover honey. Superior quality and heavy consistency, in 60-pound cans. Prices on request. Louis Kasch, Pecatonica, Ill.

WANTED—Buckwheat or basswood honey, in 1,000-lb. lot. Send sample and price. J. K. Wolosevich, 913 W. Cullerton St., Chicago, Ill.

FOR SALE—First quality basswood honey, 12½c per lb. in ton lots, F. O. B. Omaha. Thos. Atkinson, Rt. 5, Omaha, Neb.

FOR SALE—Clover honey in any quantity. Write. Roland Brandt, Postville, Iowa.

CLOVER and basswood blended by the bees, color and body fine. Prices upon request. State amount wanted. W. A. Jenkins, Box 115, Rock Port, Mo.

FOR SALE—Honey in 60-lb. cans; sweet clover, basswood, white clover, and other flavors. Tell us what you want. Beekeepers who need more honey for their trade and solicitors should write us. A. I. Root Co., Chicago, Ill.

FOR SALE—Extra fine white clover honey in 60-lb. cans, two in case. Prices on request. Sample 15c. Alfred Stutt, Rt. 5, Creston, Iowa.

FOR SALE—Extra fancy white clover extracted honey, new cases, new crop. Write for prices. Edw. A. Winkler, R. D. 1, Joliet, Ill.

FINE QUALITY clover honey. Prices upon request. State amount wanted. C. S. Engle 1827 23rd St., Sioux City, Ia.

FOR SALE—White honey in 60-lb. cans; also Porto Rican in 50-gal. barrels. Samples and prices on request.

A. I. Root Co.,
16-18 Jay St., New York, N. Y.

FOR SALE—Comb and extracted white clover honey. Extracted in 60-lb. cans, 5 and 10-lb. pails. Prices given on request. Sample 15c. F. W. Summerfield, Waterville, Ohio.

BEE SWAX WANTED—We need large quantities of beeswax and are paying good prices now. Ship to us at Hamilton, Ill., or Keokuk, Iowa, or drop us a card and we will quote f. o. b. here or your own station, as you may desire. Dadant & Sons, Hamilton, Ill.

FOR SALE—Our own crop white clover and amber fall honey in barrels and cans; also white alfalfa in cans. State quantity wanted and we will quote prices. Samples on request. Dadant & Sons, Hamilton, Ill.

HONEY FOR SALE in 60-lb. tins. White clover honey crystallized, 13c per pound. L. A. West Indian honey, liquid, 11c per pound. Hoffman & Hauck, Inc., Ozone Park, N. Y.

SUPPLIES

FOR SALE—Used standard supplies. Faulconer Bros., Lewistown, Mo.

USED CASES with two new 60-pound cans, 89c, export cases 95c each in hundred case lots or more. Used cans and cases 45c and 50c each per case. The Foster Honey & Merc. Co., Boulder, Colo.

NEARLY NEW Cowan reversible extractor, 9% in. pockets, \$28. Another, 12 in. pockets, \$35. Lorenzo Clark, Winona, Minn.

HAVE YOU any Bee Journals or bee books published previous to 1900 you wish to dispose of? If so send us a list. American Bee Journal, Hamilton, Ill.

CONNECTICUT and Rhode Island headquarters for Root's Beekeepers' supplies. A. W. Yates, 8 Chapin St., Hartford, Conn.

WESTERN BEEKEEPERS—We can demonstrate that you can save money on buying bee supplies of best quality. Write for our latest price list.

The Colorado Honey Producers' Association, Denver, Colo.

MISCELLANEOUS

WRITE for application blank if your education, business experience and beekeeping knowledge would make you available for positions in our sales and warehousing organization. Address Box 377, care American Bee Journal.

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WE HAVE NOW ON HAND, from Paris, a number of copies of the excellent work of Perret-Maisonnette, in French, entitled "L'Apiculture Intensive & L'Elevage des Reines." The first shipment was delayed over two months. The price of this very progressive work is \$1.50 by mail, prepaid. American Bee Journal, Hamilton, Ill.

THE BEE WORLD—The leading bee journal in Britain, and the only international bee review in existence. It is read, re-read and treasured. Will it not appeal to you? Specimen copy free from the publishers. The Apis Club, Benson, Oxon, England. Send us a post-card today. It is well worth your little trouble.

THE "Archiv fur Bienenkunde" is a valuable scientific publication. "It merits the appreciation of all beekeepers acquainted with the German language," says the Bee World (January, 1923). "The Archiv fur Bienenkunde, now in its fifth volume, is of as high grade as any bee journal which comes from abroad, dealing especially with the scientific aspects of beekeeping," says Gleanings in Bee Culture (February, 1923). Annual subscription, \$2. Specimen copy free. Publisher, Theodor Fisher, Freiburg im Breisgau, Kirchstrasse 31, Germany.

THE DADANT SYSTEM IN ITALIAN—The "Dadant System of Beekeeping" is now published in Italian, "Il Sistema d'Apicoltura Dadant." Send orders to the American Bee Journal. Price \$1.00.

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WANTED—12x16 pocket reversible honey extractor. Description, price. James De Moss, Thornton, W. Va.

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WANTED—To buy amber and dark honey in 60-lb. tins. Name price and if interested will ask for sample. A. G. Woodman Co., Grand Rapids, Mich.

WANTED—Honey, comb and extracted, all grades. Write me. Geo. W. Dial, 3029 Stanley Ave., Detroit, Mich.

HONEY—State price and send sample. Paul Thomae, 1157 Third St., Milwaukee, Wis.

WANTED—Shipments of old comb and capings for rendering. We pay the highest cash and trade prices, charging but 6c a pound for wax rendering. Fred W. Muth Co., 204 Walnut St., Cincinnati, Ohio.

WANTED—Car or less lots of clover honey; mail sample and quote lowest cash price. A. W. Smith, Birmingham, Mich.

A Crackerjack Bulletin

In the face of the stilted, mechanical repetition of everyday beekeeping facts, which characterizes most official publications, comes a new bulletin from the pen of that versatile man in Michigan, Russell H. Kelty. It is entitled "Seasonal Management for Commercial Apiaries," and is published by the Michigan Agricultural Experiment Station, East Lansing, Mich.

It is the finest work of its sort I have ever read; full of the most useful kind of beekeeping practice, not generalities, but brass tacks. An innovation is the use of charts to give detailed seasonal management, work-

ing drawings of honey house and bee cellar and the finest short charted account of the contributing factors of swarming that anyone has yet devised.

I am asking Kelty for another copy for my own library, and I advise you to get yours before Michigan shuts us outsiders off.

Hail to the Chief!

Do not take this lightly. We mean it. Our good friend Wallace Park, formerly the experimental apiarist at Ames, now Professor of Apiculture at Urbana, has just received his degree as Doctor of Philosophy. We rejoice in it. All beekeepers should rejoice in it. Park is one of the most practical beekeepers we have with a turn toward scientific work. He has already given us much new light on bee behavior and we now can expect him to give us much more.

We call Huber and Langstroth masters. It was investigation that made them masters and made us value them. Go to it, Park.

Prize Winning Club Number

Melvin Pellett, 17-year-old son of the associate editor, won second prize in the National Junior Garden Contest under the auspices of the Vegetable Growers' Association of America. Each contestant was required to grow a crop for sale away from home. Prizes were awarded on the best crop, together with a report of the grower's manner of management and amount of returns. Melvin won on a crop of tomatoes.

STATEMENT OF OWNERSHIP

Statement of the Ownership, Management, Circulation, Etc., required by the Act of Congress of August 24, 1912, of American Bee Journal, published monthly at Hamilton, Illinois, for October, 1924:

STATE OF ILLINOIS, } ss.
County of Hancock.

Before me, a Notary Public, in and for the State and County aforesaid, personally appeared M. G. Dadant, who having been duly sworn according to law, deposes and says that he is the Business Manager of the American Bee Journal, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, rendered by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor and business manager are:

Publishers, American Bee Journal, Hamilton, Ill.

Editor, C. P. Dadant, Hamilton, Ill.
Managing Editor, Frank C. Pellett, Hamilton, Ill.

Business Manager, M. G. Dadant, Hamilton, Ill.

2. That the owners are:

C. P. Dadant, Hamilton, Ill.
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That the known bondholders, mortgagees and other security holders owning or holding 1 per cent or more of the total amount of bonds, mortgages or other securities, are: none.

(Signed) M. G. DADANT.
Sworn to and subscribed before me this 13th day of October, 1924.

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MOVING BEES

By piecing together small suggestions it may be possible to produce a useful idea. It is well known that a frame loaded with bees may be slipped down into a strange brood nest, and the bees stay as adopted citizens. The difficulty of moving a hive for only a short distance (feet or yards) is also well known.

A simple and effective way to do this without loss or confusion is to take five or six of the ten brood frames with adhering bees (and preferably the queen) and place them in a hive body set on the desired new location. Put a division board in each hive to shut off vacant space, and let both hives stand two or three days of good weather. Then bring the frames left in the old hive, and slip them into the new hive, alternating with the frames already there—and the job is done. There is less labor required and it is a neater operation than by moving a hive a little every day, which, owing to the locations, may be impracticable.

Drone-laying Workers

Now here is another proposition: In the matter of "laying workers," I beg to dissent from the commonly accepted idea that there are numerous laying workers in a colony at any time.

For the time being a laying worker takes the place of a queen, and I believe is so regarded, being given the attention which a queen usually receives. Under ordinary circumstances the bees will tolerate but one queen; upon what ground can we think that a plurality of substitute queens would be tolerated?

A recent experience with a laying worker colony seems to demonstrate that the laying worker may be eliminated by shaking every bee off the combs at some distance from the old stand. All bees being old find their way back to the old stand excepting the laying worker which, owing to her condition, she cannot do. Not another egg appeared in the combs afterward. In practice it would be advisable to give the colony so treated a couple of frames of brood and bees, after the treatment—of course. Space will not permit of saying all I would like to say along this line.

D. Queen.

New Jersey.

(The editor used to be of the opinion of D. Queen, but one day he held up a frame from a hive of laying workers and witnessed dozens, actually dozens, of workers laying eggs at the same time. So intent were they upon their work that they did not appear to notice that the comb was out of the hive. So we cannot make any positive assurance on how many drone-laying workers there may be in a hive. Mr. Perret-Maisonnette painted the corslet of some laying workers and afterwards saw them go to the field. So it is well proved that we cannot always count upon losing them by shaking them out away from the hive.—Editor).

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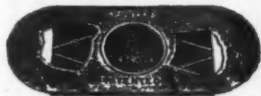
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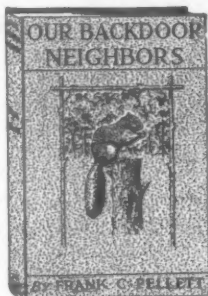
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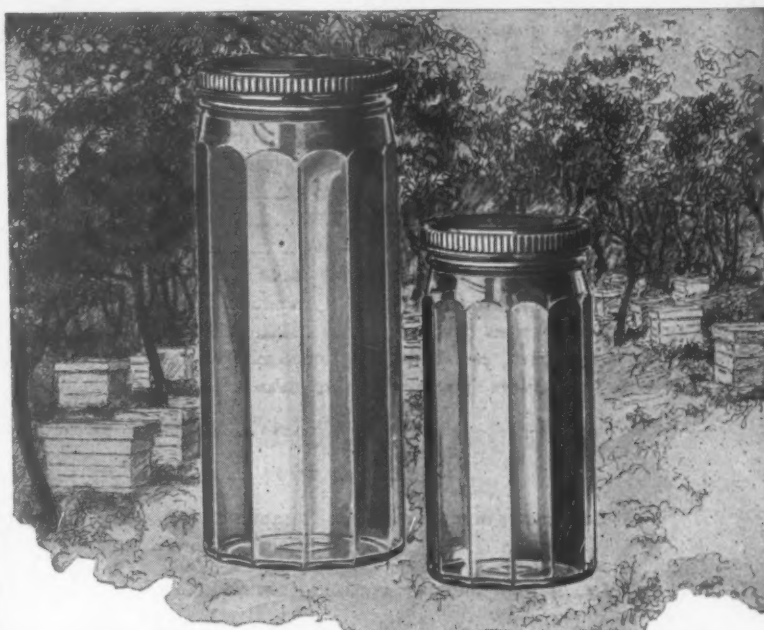
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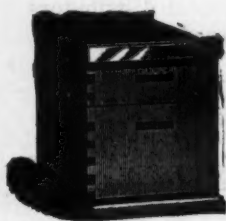
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BURR COMBS

Recollections

By L. C. Dadant.

There are a lot of things that have happened around our factory that are not recorded in our books, but are just as well remembered now as the day that the incidents happened. Probably my most vivid recollection of the early days of comb foundation was when, as a boy, I was loafing around the old log cabin which, at that time served as the foundation factory. In those days everything, of course, was done by hand, and the melting of beeswax was quite a task. There were used large size buckets or cans for cooling the wax and in stepping backward I lost my balance and fell, seat downward, into one of these cans. I was just large enough so that when doubled up like a jack-knife, I just filled the can and could not get out without help. Luckily for me, the can was filled with water and not with beeswax. The water, however, was exceedingly cold, and I can remember yet how hard I cried, and how mean my father and the men were when they laughed at my plight. This, however, did not discourage yours truly from mixing with the men at all times, and being in the way most of the time.

Nearly every beekeeper knows how hot wax will stick to the fingers, especially if the hands are not wet, either by dipping into water or by perspiration. When the old dipping process was still in use, we had in our employ a Frenchman by the name of Delarue. He was a very hard worker, in fact he was so industrious that he used to grow all kinds of fruit on his little farm. His wife would pick the fruit in the daytime while he was at work in the foundation factory, and at night Delarue would take this fruit to town on his back and deliver it to the grocers. The result was that during the day he would sometimes take a nap while trying to work. It was his duty to dip boards into hot beeswax, and this had to be carefully done. One of the crew would refill the dipping tank with hot beeswax, as fast as needed. While taking one of these naps, Mr. Delarue thrust his arm directly under the hot dipper of wax, and got the benefit of the entire lot of wax from the elbow down. The reader will

readily imagine what would happen when an excitable Frenchman who was half asleep, was brought back to his senses in this manner. Being present, I can remember the uproar that he made, and the loud laughter of all of his fellow workmen. Just how he managed to scrape this beeswax off his arm and hand I do not know, but surely he must have had one wonderful time.

One thing I do know is that if he had half the trouble getting the wax off of his arm that I had with it later on, he passed several unpleasant hours. In our more modern equipment, our beeswax is melted in a large tank which holds perhaps a ton. This is heated by steam and when the wax becomes hot it has to be watched very closely, else it will boil over. In melting one of these batches, I let the wax get just a little too warm and it began to rise very fast in the tank. Seeing this I made a hasty dive for the release valve which was situated under the tank. However, just as I ducked under the kettle, the boiling wax came over and a quantity of it struck me on the back of the head and went down my neck. I was very much impressed, as was the barber who shaved my neck and cut the wax out of my hair with the stick-to-it-iveness of hot beeswax.

When the famous "Weed process" was in the process of invention, Mr. E. G. Weed spent several weeks at our factory trying to get something that would work. His original idea was to force beeswax through a cylinder and out through a die just thick enough to make a sheet for filling. To do this he had adopted a piece of machinery built on the order of an old sausage machine. The hot wax was poured into the cylinder and the plunger forced the liquid wax out through the die. However, the wax coming through the die would cool, which would prevent it passing through without a considerable amount of pressure. When the pressure became too great the wax worked back past the cushion and covered the walls and the occupant with hot beeswax. It did not seem possible that with this rudiment of an idea, that we would ever have been able to perfect a machine which finally succeeded so well and which turned out such wonderful work.

The Weed process helped in the manufacture of foundation to a very great degree. Not only did this

process make it possible to manufacture foundation rapidly, and on a large scale, but besides this it gave quality to the beeswax, which it formerly did not possess. The Weed process, without question, makes more uniform goods, and the foundation is much tougher. This latter is an important point, especially in the shipping of comb foundation which we made during the month of February into Michigan. This consisted of several thousand pounds, and we forwarded it at a time when we thought it would be safe. It encountered, however, very severe weather, and must have been very roughly handled, for the entire shipment arrived all shook to pieces, so that it had to be returned to us and be made over. If any of the readers of the American Bee Journal should at any time receive foundation with the edges of the sheets shattered and probably cracked clear through, they may know that it is no fault of the foundation maker, but the foundation has been handled roughly by someone when very cold.

Foundation, however, can be damaged by being exposed to too much heat. One of our shipments going to a foreign port was, through carelessness, placed next to some steam pipes. When the shipment arrived it was found that a large quantity of it had been melted and run together. Several customers complained and made the remark that possibly the beeswax had not been pure, but without question it was simply a case of too much heat, and a consequent melting of the wax.

With the equipment that the average beekeeper possesses for the rendering of combs or cappings into beeswax it is remarkable in the majority of cases that the beeswax is clean and of good quality. It is a very rare case, indeed, when a shipment of beeswax is received which has enough sediment in it to make it necessary to effect much shrinkage. The most severe case of shrinkage is when cappings have been improperly rendered and a great amount of honey still remains in the beeswax. While this honey does not appear to amount to very much, at the same time it does make a heavy shrinkage when melted. With the modern wax presses now available and with factories ready to render combs and cappings into beeswax for the beekeeper, the percentage of inferior wax has become almost negligible.

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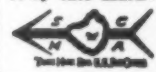
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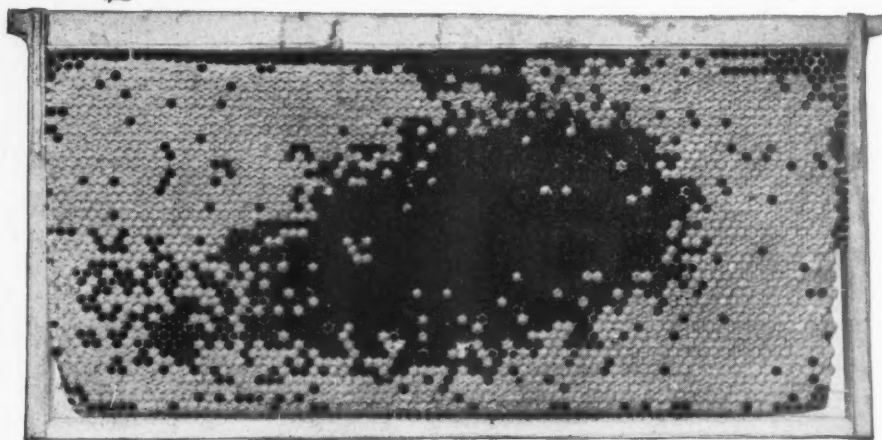
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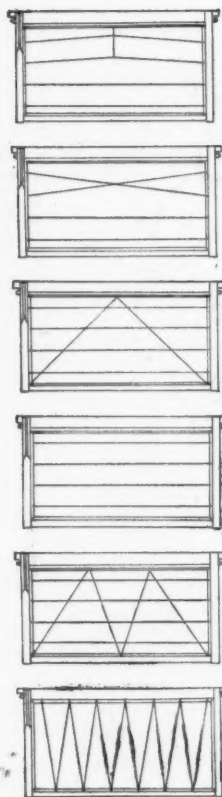
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HAMILTON, ILLINOIS





The Perfect Foundation



Until six years ago the beekeepers were compelled to use a foundation milled by the old style mill.

In 1919 the Airco method of refining and milling wax was invented, thus placing on the market a foundation, not refined by acid but by a secret process controlled by us, and which is free from all foreign matter and air. Airco foundation, made only by us, is denser, tougher, cleaner, more ductile and will stay fresh the longest. The Airco process of milling made possible a foundation that has a thinner base with a natural comb angle and one which the bees prefer. Airco foundation is today the leader of all other foundations just because the bees prefer it and the beekeepers like it.

However, there still remained one problem for the manufacturer to solve, a problem that has been given much attention by bee authorities everywhere. That was, the manufacturing of a comb foundation for brood and extracting frames that would not sag, warp, stretch or break in the extractor, and which would be composed of all worked cells without gnawing around the wires. We had experimented with all styles of wiring, a few of which are illustrated at the left. The final conclusion was that no style of wiring will produce a perfect comb for brood and extracting frames under all conditions.

In 1922 the problem was solved. Three-ply Airco foundation is the result of our exhaustive experimental work, and after three seasons' tests in the apiaries it is recognized as the foundation without an equal. Three-ply is the perfect foundation and meets all requirements.

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